Genome CA 94305

A., and Myers,

17 26 34

51

206 84 256 101

2

```
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAL Plate: 21 Row: K Column: 20 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF analysis, Similarity but not identity to protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MAVLSAPGLRGFRILGLRSSVGLAVQARGVHQSVATDGPSSTQP
ALPKRRAVRARFRSSRGEYVVARLDDLVNWARRSSLWPMTFGLACCAVEMHMAAPRYD
MDRFGVVFRASPRQSDVMIVAGTLINKWAPALRKVYDQMPEPRYVSMGSCANGGGYY
HYSYSGVWRGDLIVFIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR"
1 262 c 244 g 129 t
     Strausberg, R.
Direct Submission
Submitted (02-APR-2001) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                        CDNA Library Preparation: CLONTECH Laboratories, Inc. CDNA Library Arrayed by: The I.N.A.G.E. Consortium (LLNL) DNA Sequencing by: The I.N.A.G.E. Consortium (LLNL) DNA Sequencing by: Sequencing Group at the Stanford Human Geno Center, Stanford University School of Medicine, Stanford, CAN Web Site:

Abstract: Application, Mark) mcd&paxil.stanford.edu

Dickson, Mark) mcd&paxil.stanford.edu

Dickson, Mark) Grimwood, J., Rodriquez, A., and Mye
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="MGC:14592 IMAGE:4276489"
/tissue_type="Brain, primitive neuroectodermal"
/clone_lib="NHH MGC_56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="Unknown (protein for MGC:14592)"
/protein_id="AAH05954.1"
/db_xref="GI:13543603"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGCTCCAGCGTGGGCCTGGCTGTGCAGGCACGAGGTGTCCATCAGAGCG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 alalaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MetalaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AlavalAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCCACCGATGGCCCAAGCAGCACCCAGCCTGCCTTGCCAAAGGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps: 0
Percent Identity: 99.531
                                                                                                                                                          http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Vector: pDNR-LIB"
21. .662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1...787
                                                                                                                                                                                                         Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                      Contact: MGC help desk
                                                                                                                                                          NIH-MGC Project URL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.226
99.531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality: 1108.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_block:
US-09-525-867-1 x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT
AUTHORS
TITLE
JOURNAL
                                                                                                                                                          REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 787)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BCO05954 787 bp mRNA PRI 12-JUL-2001
Homo sapiens, clone MGC:14592 IMAGE:4276489, mRNA, complete cds
BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                        GGATGACCTCGTCAACTGGGCCCGGCGGAGTTCTCTGTGGCCCCATGACCT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrServalVa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 lArgGlyCysAspArglleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                               uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlavalAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP 84
                                                                                                                                                                                                            1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 306 TACGACATGGACCGCTTTGGCGTGTCTTCCGCGCCAGCCCGGCCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           556 cacciaceccaseccerereracecarciaesecrecaeaeaaa
                                                                                                                                                                                                                                       506 GAGGGGCTGCGACCGCATCGTGCCCGTGGACATCTACATCCCAGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                   alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
  Gaps: 0
Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           606 ATCAAGCGGGAGCGGAGCCTGCAGATCTGGTACCGCAGG 644
                                                                                                                                                             t0
                                                                                                                                                          from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BC005954.1 GI:13543602
Ratio: 5.249
Percent Similarity: 100.000
                                                                                                                                                       Align seg 1/1 to: BC001715
                                                                          alignment_block:
US-09-525-867-1 x BC001715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
LOCUS BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name: gb_pr:BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
```

117 356 151 456 170

DEFINITION ACCESSION

VERSION

201

184

ORGANISM KEYWORDS SOURCE

REFERENCE

67

34

220

```
alignment_scores:
                                                                                                                                                                                                                                                                                                                          Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10. .654
/codon_start=1
/product="My017 protein"
/product="My017 protein"
/product="12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:12001974"
/db_xref="01:1001974"
/db_xref
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

(bases 1 to 754)

Mao,Y.M., Xie,Y., Huang,X.Y., Ying,K. and Dai,J.L.

Direct Submission
Submitted (20-APR-1998) Institute of Genetics, School of Life Science, Fudan University, 220 Handan Rd., Shanghai 200433,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF060512 754 bp mRNA PRI 02-JAN-2001
HOMO Sapiens clone 016403 My017 protein mRNA, complete cds.
AF060512.1 GI:12001973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCT 270
                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                 TACGACATGGACCCCTTTGCCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTC 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                 rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa 167
   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGACGTCATGATCGTGGCCGGCACACTCACCAACAAGATGGCCCCAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     521 GAGGGGTGCGACCGCATCGTGCCCGTGGACATCTACATCCCAGGCTGCC
   uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                           TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           621 ATCAAGCGGGAGCGGAGCTGCAGATCTGGTACCGCAGG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="016d03"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="brain"
/dev_stage="fetus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1. 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
LOCUS AF060512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_pr:AF060512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P.R.China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                        221
                                                                                                                                             84
                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                     117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
```

```
29-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (ubiquinone
                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                       159
                                                                                                                                                                                                                                                                                                                                                                                                                        210 GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGTGGCCCATGACCT 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360 CGACGICAIGAICGIGGCCGGCACACICACCAACAAGAIGGCCCCAGCGC 409
                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                             59
                                                                                                                                                                                                          34
                                                                                                                                              17
                                                                                                                                                                                                                              34 alAlaThrAspGlyProSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    410 TICGCAAGTCTCCCCACACACACAGAGCCGCGAGCCGCCTACGTGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                149 rMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnAr
                                                                                                                                                               10 ATGGCGGTGCTGTCAGCTCCTGGCCTGCGGGCTTCCGGATCCTTGGTCT
                                                                                                                                                                                                                                                                                                           84 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   134 euArgLys.Val...TyrAspGlnMetProGluProArgTyrValValSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  560 receder. Accededadeceraciterracecarcerecacarcers
                                                                                                                                              1 MetalaValLeuSeralaProGlyLeuArgGlyPheArglleLeuGlyLe
                                                                                                                                                                                                            17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                        uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          260 TCGGCCTGGCCTGCTGCTGGAAGATGATGCACACATGGCAGCACCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199 gLysIleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BIPSSTSU 752 bp MRNA MAM, B.taurus mRNA for PSST subunit of the NADH: oxidoreductase complex.
Length: 215
Gaps: 2
Identity: 97.209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X65020
X65020 1 GI:11256
NADH-ublquinone oxidoreductase subunit.
                                                                                                                 to:
                                   Percent
                                                                                                              from: 1
 Ouality: 1046.50
Ratio: 4.960
nilarity: 98.140
                                                                                                              to: AF060512
                                                              alignment_block:
US-09-525-867-1 x AF060512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_om:BTPSSTSU
                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
```

63

96

313

363

```
etalaProalaLeuargLysValTyrAspGlnMetProGluProArgTyr 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197 LeuGlnArgLysIleLysArgGluArgArgLeuGlnIleTrpTyrArgAr 213
                                                                                                                                                                                                                           97 AlaAlaProArgTyrAspMetAspArgPheGlyValValPheArgAlaSe 113
                                                                                             214 GGTGGCCAAGCTGGACGACCTCATCAACTGGGCGCGCGGGAGCTCGCTGT
                             .64 GCTGTGGTCCCCAAACCTGCCGCACTTCCCAGCAGCGGGGCGAGTATGT
                                                                                                                                                                         314 GCGCCACCCCCTATGACATGGACCCCTTTGGCGTGGTCTTCCGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                 114 TGGCCCCTGCGCTCCGCAAGGTCTACGACCAGATGCCGGAGCCCCGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rpProMetThrPheGlyLeuAlaCysCysAlaValGluMetMetHisMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rTyrSerValValArgGlyCysAspArglleValProValAspIleTyrI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180 leProGlyCysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGln
   51 AlaValAlaProLys........ProSerSerArgGlyGluTyrVa
                                                                           lValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgSerSerLeuT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC014<u>1</u>69 29563 bp D
Drosophila melanogaster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fruit fly.
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC014169
AC014169.1 GI:6437166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG; HTGS_PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: gb_htg:AC014169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seg_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           213 g 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               664 G 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                             130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VSQARAVVPKPAALPSSRGEYVVAKLDDLINNARRSSLMPNTFGLACCA EMMHNAAP
RYDMDRFGVVFRASPROSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVSMGSCANGG
GYYHYSYSVVRGCDRIVPVDIYVPGCPPTAEALLYGILOLOKKIKREKRLRIWYRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MAALAALRLLHPILAVRSGVGAALQVRGVHSSMAADSPSSTQPA
                   Chordata; Craniata; Vertebrata; Euteleostomi;
Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                 æ
                               Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovolde Bovidae; Bovinae; Bos.

1 (bases 1 to 752)

Arizmendi,J.M., Runswick,M.J., Skehel,J.M. and Walker,J.E.
NADH: ubiquinone oxidoreductase from bovine heart mitochondria.

fourth nuclear encoded subunit with a homologue encoded in
                                                                                                                                                                                                     (bases 1 to 752)
Walker, J.E.
Direct Submission
Submitted (11-MAR-1992) J.E. Walker, M.R.C.Lab of Molecular
Biology, Hills Road, Cambridge CB2 2QH, UK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=experimental
/product="PSST subunit of the NADH: ubiquinone
oxidoreductase complex" /
/protein_id="CAA46154.1"
/db_xref="G1:599691" /db_xref="SWISS-PROT:P42026"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="PSST subunit of the NADH: ubiquinone oxidoreductase complex"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64 GCGCTCTGGCGTGGGTGCCTCTGCAGGTGCGAGGGGTCCATTCTAGCA 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17 AIGGCGGCGTGGCGCTCTCCGCCTGCTC...CACCCTATCCTTGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps: 2
Percent Identity: 85.714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                               chloroplast genomes
FEBS Lett. 301 (3), 237-242 (1992)
92249573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to: 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=experimental
243 c 230 g
                                                                                                                                                                                                                                                                                                                                   /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /EC_number="1.6.99.3"
                   Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                         /dev_stage="adult"
/tissue_type="heart"
17. .667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="cI-PSST"
17. .667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128. .664
/gene="cI-PSST"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="cl-PSST"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                           /germline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17. .667
/partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   965.50
4.710
94.470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: BTPSSTSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-525-867-1 x BTPSSTSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyA_signal polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
ORGANISM
                                                                                         AUTHORS
TITLE
                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                         REFERENCE
                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                   FEATURES
```

180

563

463

196

```
DNA HTG 16-NOV-1999
*** SEQUENCING IN PROGRESS ***, in ordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              submitter.
                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission

L Submitted (16-NOV-1999) Celera Genomics, 45 West Gude Drive,
Rockville, MD, USA
Rockville, MD, USA
This sequence was identified as CDM:10210747 by the submitter.
For further information on this sequence e-mail to fly@celera.cc
* NOTE: This is a "working draft" sequence.
* This sequence will be replaced
* by the finished sequence as soon as it is available and
* the accession number will be preserved.

Location/Qualifiers
urce
1. 29563
                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 29563)
Adams,M. and Venter,J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
```

S

us-09-525-867-1.rge

BASE COUNT

21

67

```
Number of Submission

Submitted (27-SEP-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA

On Dec 13, 1999 this sequence version replaced gi:6449494.

For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence), or send email to bdop@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a "working draft' sequence it currently consists of 77 contigs. The true order of the pleces

* arbitrary. Gaps between the contigs are represented as runs of N. but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence

* as soon as it is available and the accession number will

* be preserved.
                                        Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

(bases 1 to 140685)

Ceniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,

Boyle, C.M., Farfan, D.E., Galle, K., George, R.A., Harris, N.L.,
Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R.; Karra, K.,

Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B.,

Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D.,

Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                  Unpublished
Clanker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.
2 (Dassa: 1 to, 140685)
Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
Boyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,
Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,
Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P.,
Moshrefia, R.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,
Pelifer, B., Poon, L., Sequelira, A., Sethi, H., Snir, E.,
Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zleran, L.L. and
    Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of unknown length contrag of 73. bp in length gap of unknown length contrag of 1302 bp in length gap of unknown length gap of unknown length gap of unknown length contrag of 65. bp in length gap of unknown length gap of unknown length gap of unknown length contrag of 379 bp in length contrag of 379 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 1630 bp in length
unknown length
of 632 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 1284 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 1476 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig of 674 bp in length
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 560 bp in length
unknown length
of 545 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 820 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 517 bp in length unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 1348 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig gap of contig contig gap of contig gap of contig gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22889:
3554:
3634:
4239:
4319:
4778:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5295:
5375:
5935:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6015:
6560:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6640:
7460:
7540:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11246:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11508
11508
1288
1388
1385
1385
1385
1385
1385
1424
1479
1477
1611
17461
17461
17461
17461
17461
17461
17461
17461
17883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rubin, G.M.
    ORGANISM
                                                                                                                                                                                                                                                                                                       JOURNAL
REFERENCE
                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20064 CCGTGCTGCGGTAGGATAATCCCGTCGACATATACGTACCCGGTTGTC 20113
                                                                                                                                                                                                                                                                                                                                19673 ITGCCGAAGTGGCCCAAAATCTGCCCAAGAAGGGCTA.....CTCT 19713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19714 CCGTTCGGCACCAAACAGTCCTCCGTTGCGGAGTGGTCACTGGCCAGACT 19763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .9914 CGATGTCATCATCGTCGCTGGCACGCTGACCAACAAATGGCACCGGCCC 19963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20114 CGCCAACCGCCGAGGCGCTCATGTACGGCGTTTTGCAGCTGCAGAAGAAG 20163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              134 euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101 TyraspmetaspargPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 rAspvalMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                       18 ArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerVa 34
                                                                                                                                                                                                                                                                                                                                                                                           34 lAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               laVal.AlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                          197
                                                                                                                                                   Percent Identity: 71.574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20164 GTTAAGCGGATGAAGACGCTCCAGATGTGGTATAGGAAG 20202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                           to: 29563
  8597
    р
                                                                                                                                                                                                                                                              from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC010919.9 GI:6563419
HTG; HTGS_PHASE1.
    O
                                                                                                      756.50
4.274
89.848
  6105
                                                                                                                                                                                                                                                              to: AC014169
                                                                                                                                                                                            alignment_block:
US-09-525-867-1 x AC014169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_htg:AC010919
    ൯
                                                                                                          Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fruit fly
                                                                                                                                                 Percent Similarity:
8656
                                                                                        alignment_scores:
                                                                                                                                                                                                                                                              Align seg 1/1
```

151

184

ACCESSION VERSION KEYWORDS SOURCE

```
15772 15731 15791 1579 1 Unknown in ength [1578 1579 1579] 1579 1 Unknown in ength [1578 1579 1579] 1579 1 Unknown in ength [1578 1579] 1579 1 Unknown in ength [1579 1579] 1573 1 Unknown in ength [1579 1579] 1574 1 Unknown in ength [1579 1579] 15
```

	*	2718	272	 m m	onti ap o	440 bp cnown l	D	
	*	2726	1278	 m	onti	540 bp.in	gth	
	< *	2788	1287		ar onti	842 bp in	qth	
	*	2872	1288		o de	cnown length	1	
	* *	2880	1291		onti	362 bp in	gth	
	*	2924	1299		onti	688 bp in	gth	
	* 1	2993	1300	 in c	o de	cnown length		
	*	3056	1306		10 di	snown lengt	ر د	
	* *	3064	1311		onti	512 bp in	gth	
	* *	3123	1318		ap o onti	594 bp in	gth	
	* +	3182	1319		o de	cnown length		
	* *	3230	1324	 უ ო	2017 30 0	4// pp 1	g c.	
	*	3246	1330		onti	553 bp in	gth	
	* 1	3301	1330		o de	known length		
	* *	3374	1338		2011 30 0	ast bp i	grn	
	*	3382	1342		onti	449 bp in	gth	
	*	3427	1343		o de	known length		
	* +	3435	1349		onti Sn O	608 bp i	gth	
	* *	3504	1353		ap o Onti	339 bp in	qth	
	*	3538	1354	 m	o de	known length	1	
	* *	3546	1360		onti	552 bp in	gth	
	*	3609	1365		ar onti	452 bp in	qth	
	*	3654	1366		o de	known length	1	
	* *	3662	1370		onti en o	440 bp in	gth	
	*	3714	1376		ar Onti	453 bp in	gth	
	*	3760	1376		o de	known length	. :	
	* *	3768 3805	1380		onti	374 bp in cnown lengt	gth	
	*	3813	1383		onti	218 bp in	gth	
	* *	3843	1384		apoo onti	known lengt 427 hp in	d.t.h	
	*	3886	1389		o de	snown length		
	* *	3074	1391	 ກ ດ	onti	ZIO DP in enown lengt	grn	
	* *	13923(0 13972 8 13980		contig gap of	98 bp in own lengt	gth	
nment	score Qua R	s: lity: atio:	756.50 4.274			Length: 1 Gaps:		
cent		ity	o, o	Pe	rcent I	dentity: 71.57		
nment 09-52	block 5-867-	: 1 × AC(010919	:				
gn se	9 1/1	to: AC	010010	from	т.	to: 140685		
18	rgser	erval	lyProAl	Val	ja -	LH1	rVa	34
03611	CGCTCT	GAATTT	GCCCTGGT	:	929	CCAACAACAAACGCTTC	CAG	1036
34	lAlaThr	AspG1	rosers	rTh	GlnPr	Ä.	rgA	51
03655	TTGCCG	- 8	CCAAAA	ŢĞĊ.	CCAAGAA	GGGCT	TCT	1036
51	laval./ :: ccgrrcc	AlaProl	LysProSer	Ser	ArgGlyC ::: GTTGCGC	GluTyrValValAlaLy: ::: ::: :: GAGTGGTCACTGGCCAG	SLe ACT	67 1037
			8	- 1				5
			:: :	4 - C	1000044U	::: :::		
4.0	SACGA	179.17	פפפ	ינפ	99944	10810100000		>

```
SM Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Eukaryota; Neoptera; Endopteryota; Diptera; Brachycera;

Muscomorpha; Ephydroidea; Drosophilae; Drosophila.

E (bases 1 to 163378)

S (Celniker,S.E., Agbayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G., Butenhoff,C., Champe,M., Chavez,C., Chew,M., Ciesicika,L., Hinkle,A., Hoskins,R.A., Houston,R.R., Harris,N.L., Hinkle,A., Hoskins,R.A., Houston,R.A., Humasti,S.R., Karra,K., Kearney,L., Lee,B., Lewis,S., Li,P., Ling,H., Mosinefi,A.R., Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfeiffer,B., Richards,S., Sethi,H., Svirskay,R.R., Wan,K.H., Webster,D., Woolley,P., Yang,S., Yee,M., Yu.C. and Rubin,G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
LOCUS AC008336 163378 bp DNA HTG 15-FEB-2000
DEFINITION Drosophila melanogaster chromosome X clone BACR20P20 (D890) RPCI-98
20.P.20 map 13F-14A strain y, cn bw sp, *** SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (02-AUG-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA On Feb 15, 2000 this sequence version replaced gi:6466495. For further information about this sequence, including its location
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Joydening of Diosophina metanogascer on published Clases 1 to 163378)

2 (bases 1 to 163378)

2 (clulker,S.E., Agbayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G., Butenhoff,C., Champe,M., Chavez,C., Chew,M., Ciesiolka,L., Doyle,C.M., Farfan,D.E., Galle,R., George,R.A., Harris,N.L., Hoskhos,R.A., Huston,K.A., Humasti,S.R., Karra,K., Kearney,L., Kim,E., Lee,B., Lewis,S., Li,P., Lomotan,M.A., Mazda,P., Moshrefi,A.R., Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfelifer,B., Poon,L., Sequelra,A., Settli,H., Shir,E., Svirskas,R.R., Wan,K.H., Weinburg,T., Zhang,R., Zieran,L.L. and Rubin,G.M.
                                     103796 TCGGTTTGCCCTGCTGTGCCGTCGAAATGATGCACATCGCTGCTCCGCGT 103845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104096 CGCCAACCGCCGCAGGCGCTCATGTACGGCGTTTTGCAGCTGCAGAAGAAG 104145
                                                                                                                                                           103946 IGCGAAAGGICTACGACCAAATGCCCGAGCCACGTTGGGTCATCTCCATG 103995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                134 euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlySerCysAlaAsnGlyGlyGlyTyrHisTyrSerTyrSerValVa 167
                                                                                                                         TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                   rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ***, 110 unordered pieces.
AC008336
AC008336.5 GI:6978360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTG; HTGS_PHASE1.
fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name: gb_htg:AC008336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                         101
                                                                                                                                                                                                                                                   117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
```

```
and relationship to other sequences, please visit our sequence archive Web site (http://www.fruifily.org/sequence/) or send email to bdgp@fruifily.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently consigns. The true order of the pleces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as "runs of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                  contig of 542 bp in length

contig of 579 bp in length

contig of 559 bp in length

contig of 557 bp in length

contig of 557 bp in length

contig of 550 bp in length

contig of 560 bp in length

contig of 808 bp in length

contig of 525 bp in length

contig of 555 bp in length

contig of 655 bp in length

contig of 1144 bp in length

contig of 1155 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of unknown length contig of 331 bp in length gap of unknown length contig of 1101 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig of 580 bp in length
gap of unknown length
contig of 1012 bp in length
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
of 1442 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 745 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown lêngth
of 747 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 999 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig of 978 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                     542...
10201...
12201...
20202...
20520...
33422...
34522...
44082...
44082...
6471...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9935:
10015:
10700:
10780:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11447
1125484:
12564:
13216:
13296:
14351:
15575:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9019:
9099:
                                                                                                                                                                                                                                                                                                                                                                                                                                              6551:
7115:
7195:
7828:
7908:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18233:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20241:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23152:
23897:
23977:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24955:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20981
```

	ngth ngth ngth ngth in lengt ngth ngth ngth ngth ngth ngth in lengt ngth in lengt ngth in lengt ngth in lengt ngth in lengt		noth to you have a post of the
unknown le of 1105 bp unknown le of 909 bp unknown le of 1505 bp unknown le of 996 bp unknown le of 900 bp unknown le of 1296 bp unknown le	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	of 2216 bp unknown le unknown le of 2538 bp unknown le of 2097 bp unknown le of 2097 bp unknown le of 2176 bp unknown le of 2176 bp unknown le of 2784 bp	unknown of 4018 unknown of 4018 unknown of 3597 unknown of 5021 unknown of 5021 unknown of 5021 unknown of 5021 unknown of 6023 unknown of 6454
oapontionio	αν τα	oor to the control of	on the control of the
78898989898989898989899999999999999999	, www.444444444444\\ , www.4444444444\\ , www.11.200011122211222112222222222222222	20000000000000000000000000000000000000	00000000000000000000000000000000000000
77-20-20-20-20-20-20-20-20-20-20-20-20-20-	2 K K K K K K K K K K K K K K K K K K K	20000000000000000000000000000000000000	011044888004440000000000000000000000000
* * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * *	****

en e	* * * * * * * * * * * * * * *	120524 126528 1366508 1366608 13666 137306 137306 138057 138057 138625 138625 138405 139440 140067	126527 136607 136607 136607 1373805 1373805 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626 138626	contig gap of contig gap of gap of contig gap of contig gap of contig gap of contig gap of	unknown unknown of 440 unknown of 440 unknown of 568 of 568 unknown of 568 unknown of 627 of 627 unknown of 627 unknown	bp in length a length a length bent in length bent in length bp in length bp in length bp in length length bp in length length length length	th b h h h h
alignment Percent	t_score Qua R Simila	s: lity: 7 atio: 4 rity: 8	6.50 274 .848 P	ercent :	Length Gaps Identity	: 197 : 71.574	
-09-	5-867 g 1/1	1 x AC008 to: AC00	336 8336 fr	от: 1	to: 1633	78	
18 58622	Argser CGCTCT	ServalGly ::: GAATTTGGC	ProAlaVa ::: CCTGGT	1GlnAla2 GCGC	argGlyva :: ccaacaac	HisGlnSerV. ::: AAACGCTTCCA	a 34 G 58665
34	1Alath ::: TTGCCG	rAspGlyPr ::: AAGTGGCCC	OSerSerT ::: : AAAATCTG	hrGlnPro :: CCCAAGAA	oalaLeuP ::: AGGGCTA.	roLysAlaArg	A 51 : T 58706
51 58707	laval. ::!!! ccGTTC	AlaProLys ::: GGCACCAAA	Proserse CAGICCIC	rArgGly(::: CGTTGCG(Glufyrva ::: GAGTGGTC	lvalalaryst. ::: ::: acregecagae	e 67 58756
67 58757	uAspAs GGACGA	pLeuValAs ::: TCTGCTCAA	nTrpAlaA. ::: CTGGGGTC	rgArgSeı ::::: GCAAGGG	rSerLeuT : ::: cTCGATCT	rpProMetThr GGCCACTGACT	P 84 T 58806
84 58807	heglyL TCGGTT	euAlaCysC TGGCCTGCT	ysalaval GTGCCGTC	GluMetMe GAAATGA	etHisMet ::: TGCACATC	AlaAlaProAr 	g 100 T 58856
101 58857	TyrAsp TACGAC	Metasparg ATGGATCGA	PheGlyVa ::: TATGGTGT	lvalPhe/ rgrgrrcc	Argalase CGTGCATC	rProArgGlnS TCCACGTCAGG	e 117 : 58906
117 58907	rAspva : CGATGT	lMetileva ::: CATCATCGT	lalaglyr cgcrggca	hrLeuTh ccccacc	rAsnLysM CAACAAAA	etalaProala TGGCACCGGCC	L 134 58956
134	euArgL TGCGAA	ysvalTyrA	spGlnMet ACCAAAIG	ProGluP) ccGAGC	roArgTyr ::: CACGTIGG	ValValSerMe ::: GTCATCTCCAT	t 150 59006
151	Glyser GGCAGC	CysAlaAsn TGTGCCAAC	GlyGlyGl GGCGGCGG	YTYTTYT! CTACTACC	Histyrse 	rTyrServalv 	a 167 T 59056
. 167	lArgGl CGTGG	yCysAspAr 	gIlevalP: ::: GATAATCC	roValAsı CGTCGAC	piletyri catatacG	leProGlyCys :: TACCCGGTTGT	P 184 C 59106
184	roProT CGCCAA	hralagluA 	laLeuLeu' ::: GGCTCATG'	FyrGlyI] ACGGCG	leLeuGln :: TTTGCAG	LeuGlnArgLy. CTGCAGAAGAA	s 200 59156
201	IleLys:::{	ArgGluArg :::	ArgLeuGl	nlleTrp1 :::	TyrArgAr ::	g 213 :	

σ

```
.1504,1572. .2077,2153. .2813))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EXLABELAMSEDDAGEDIDITERLUDMSADILAEVRAARILHGGEFORAMOOKQAKD
FSGGWRWRIALARALEVYEPHLLLDEPTNHLDLDAGVWLEEEKTYTKILVIJSHSOD
FLUGVCTNITHLTGKRAYTTGNYEAFVYRTHLELENGWKOYNWEDDDISHMKNYTAR
FGHGSAKLARQAQSKERLYYTGNYEAFVYRTHELLENGWKOYNWEDDDISHMKNYTAR
FGHGSAKLARQAQSKERTLAKKVAQGITEKYSDDKVLHFYFPSCGKVPPPYLNYONVY
FRYNDETPWYYKNLEFGIDLDTRLALVGPNSAGKSTLLKLIYGDLVFTSGMIFKNSHL
RARHQHLEILLDLASPLFWMRAFPDVKEREEMRKIIGRYGLTGRQQVCFIRQLS
DGQCKVVPRMLAMOVPHLLLLDSPTNHLDWSTIDALADAINDFDGGWVLVSHDFRLI
NQVAEEIWVCEKETVTKWKGGILDYKDHLKKITSENEKKARAGK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="FLYBASE:FBan0015601"
/db_xref="FLYBASE:FBgn0030673"
/db_xref="TLYBASE:FBgn0030673"
/evidence=not_experimental
/protein_id="AAF48494.1"
/db_xref="GI:A993110"
/translation="MSKLSDTKIPITEFLEAYRQPCLYNTLLDSYKNRVSREEAYGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IIRSLKIPQLTVSDIKLKIKSVRTVVSKELRIWMREKELGRTYEPKLEWFRLADSFLR
SVSLGHCKROGKNNSSRAQLTTIKSBETSKLLLTAAADITMSEDALEBEDAEVOEPE
ECPLEESRPTASICKDSTLCLADOPQQEHYSQGCSSSQQLEHTWAQRKSKYITSLDS
AGEDDLIIFGQSIASQLRTIPDSYSRSVAKLRIQQVLFEAETGQFQSTEVNSTQLONT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="mssaakkreagkkkDaknkkIQQIPSTKkanGVPERELTEEEKL
CAKLEEEARISAEARSCTGSLAVHPRSRDVKJANFSITFFGSELLQDTMLELNGGRRY
GLIGLNGCGKSSLLAVLGGREVPVPPHIDIFHLTREIPASSKSALQCVMEVDEERIKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          join(<7954. .8220.8556. .8795,8865. .9086,9145. .9416,
9497. .9993,10131. .10515,10567. .15238,15758. .18218,
18283. .18755,18814. .19154,19217. .20287,20378. .20513,
20573. .22032,22060. .23197,23270. .23671,23739. .23927,
23992. .24313,24377. .24542,24617. .24807,24885, .>24987,
/gene="CG8184"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="FLYBASE:FBan0008184"

/db_xref="FLYBASE:FBan0008184"

/db_xref="FLYBASE:FBan0030674"

/db_xref="FLYBASE:FBan0030674"

/db_xref="FLYBASE:FBan0030674"

/db_xref="FLYBASE:FBan030674"

/db_xref="FLYBASE:FBand-18218, 19218, 19218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 18218, 1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOID (<4963 . 5295,5348 . >5848)
/gene="CG15601"
                                                                                                                                                                                                     /db_xref="FLYBASE:FBan0009281"
/db_xref="FLYBASE:FBqn0030672"
complement.join(772..903,968./gen="CG9281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xxef="FiyBasE:FBan0015601"
/db_xxef="FiyBasE:FBgn0036673"
/ev1dence=not_experimental
<4963. >>5848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="FLYBASE:FBan0008184"
/db_xref="FLYBASE:FBgn0030674"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="FLYBASE:FBan0009281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="FLYBASE:FBgn0030672"
/protein_id="AAF48493.1"
/db_xref="G1:7293109"
'db_xref="FLYBASE:FBan0009281"
'db_xref="FLYBASE:FBgn0030672"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="FLYBASE:FBan0015601"
/db_xref="FLYBASE:FBgn0030673"
/evidance=not_experimental
join(4963. .5295,5348. .5848)
/gene="CG15601"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="CG15601 gene product"
                                                                                                                                                                                                                                                                                                                                                                          /note="CG9281 gene product"
/codon_start=1
                                                                                         complement(<772. .>4380)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="CG15601"
/map="13E14-13E14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product-"CT24358"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        map="13E14-13E16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="CT35724"
                                                                                                                                                            /map="13E12-13E14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <7954. .>2498/
                                                                                                                                 /dene='
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dene
                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                              Fruit fly.

Buckaryota, Metazoa Arthropoda; Tracheata; Hexapoda, Insecta;

Buckaryota, Meopleta; Endopteryota; Dipters; Brachycera;

Muscomorpha; Ephydroidea; Drosophilidae; Drosophila

(Bases I. D. 227446)

Muscomorpha; Ephydroidea; Drosophilidae; Drosophila

(Bases I. Calliker; E. Holt.R.A. Evans, C.A. Gocayne, J.D.,

Amanatidae; Ephydroidea; Drosophilidae; Drosophila

(Gorge R.A. Lewis, E.F. Richards, S., Ashurner, M. Henderson, S.N.,

Sutton, G.G. Worthan, T.R. Yandell, M.D., Zhang, Q., Chen, L.X.

Man, K. H., Doyle, C. Baxter; E.G. Helt.G. Nelson, C.R., Gabor

Man, K. H., Doyle, C. Baxter; E.G. Helt.G. Nelson, C.R., Gabor

MANDOS, El., Morthan, E. Bathar, E. A., M. Basu, A.,

Mannerdale, J. Bayraktroglu, L. Beasley, E. M., Beason, K. Y.

Banoso, P. W. Bemman, B.P. Bhandari, D., Bottler, P., Burles, P.,

Buchan, W. Bouck, E. Downes, M., Dugan-Rocha, S., Durkova, D.,

Botchan, W. B. Bayraktroglu, L. Beasley, E. M., Beason, K. Y.

Banoso, P. W. Bemman, B.P. Bhandari, D., Bottler, P., Burles, P.,

Banos, P. W. Bennan, B.P. Bhandari, D., Bottler, P., Burles, P.,

Banos, B. Delcher, A., Dahnes, M., Dugan-Rocha, S., Dunkova, B.C.,

Bodson, K., Doup, L.E., Downes, M., Dugan-Rocha, S., Dunkova, B.C.,

Fleischmann, M., Glasser, K., Glodek, A., Gong, F., Garrell, J. H., Gu, Z.,

Gabratt, M. M., Glasser, K., Glodek, A., Gong, F., Garrell, J. H., Gu, Z.,

Glabatt, M. M., A., Ketlom, K. A., Mattei, B., McIntosh, T.,

I., J., Lila, Z., Lilang, Y., Lila, X., Mattei, B., McIntosh, T.,

I., J., Lila, J., Lang, Y., Lila, X., Liu, X., Mattei, B., McIntosh, T.,

I., J., Lila, J., McBrerfo, J., Merkei, B., McIntosh, T.,

Sanders, R.D., Scheeler, S., Sher, R., Perl, Y., Herkey, M.,

Sanders, R.D., Scheeler, S., Sher, S., Shradling, A.C.,

Sanders, R.D., Wall, M., Strong, W., San, E., Spradling, A.C.,

Sanders, R.D., Wall, M., Strong, W., San, E., Spradling, A.C.,

Sanders, R.D., Wall, M., Shang, G., Zhan, W., Shen, M., Wall, M., Shen, M., Shang, S., Wall, M., M., Strong, W., Shang, S., Wall, M., Schene, E.W., Rabin, G., Wall, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(join(772. .903,968. .1504,1572. .2077,2153. .2821,
                                                                                                                                                            seq_documentation_block:
LOCUS AE003500 327446 bp DNA INV 04-OCT-2000
DEFINITION Drosophila melanogaster genomic scaffold 142000013386053 section 17
ACCESSION AE003500 AE002593
VERSION AE003500.2 GI:10728273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Adams, M.D., Celniker, S.E., Gibbs, R.A., Rubin, G.M. and Venter, C.J. Direct Submission
Submitted (21-MAZ-2000) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
on oct 9, 2000 this sequence version replaced gi:7293108.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .327446
/organism="brosophila melanogaster"
/orzenosome="X" /chromosome="X"
59157 GTTAAGCGGATGAAGACGCTCCAGATGTGGGTATAGGAAG 59195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4145. .>4380))
/gene="CG9281"
/product="CT26402"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 327446)
                                                                                         seq_name: gb_in:AE003500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
```

34 lAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgA

```
AGLINNMEN INECSTAREPAINTY TO STYRE LABER KABLES OLDS SLAFKKEYS CYTORA ALLINNMEN INECSTARE IT IN NABER TO STATE IT AND STATE IT STATE IT AND STATE IT STATE IT AND STATE IT STATE IT STATE IT AND STATE IT STATE I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RAGSRLMKIVHYTGAERQGGTLPLLVRDCIDNLTTHGLTERYPLILATSLFSLLYHLA
SYEMGGTALVKSGMMQSLLCVISWPGVDLEHITFVTRAVRVIDLITNIDIARFHQNNG
LNVFIDRLEKEIKSCCRALADIGITLKESTLRDDHKLDTSLDHVDEDVEDGSGENASV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ICSLSDOYOQPOWOYHYABELIAAVARALAQPDSAEKHTRLQVLMSLFPNLIESPHLY
DKVUMHRNIMYRVLLRQGVMTYLTKVAQYRDLSNHMTLSTLAAILARMEILLRFSYST
TTLGSKRILFGSGGPGGPNASGNGNNTAGGSSGNGPGSGNTYGTIINRLYPRLAART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGSCAGSVGGVSGSVSGNSSAAVIDVVEERSNGGDTNDPPANVSSASGAGQSSTSG
GPVRPVVNFDQLMDDFLQSEGIRLASRSGGCAGSGSGSVGASSSGQNGSNTAASSTN
SGNNSGIGNLRLRINPDVDVGSGNGSGSGSGSNAGVVNDNGISGGGGSDGASTSSDTG
                                                                                                                                                                                                                                                                                                                    IVKLFNIAERWGDPNYGLSLKDCCIGEPKLEFLYQLCIDYVDEHGHAAQLEIPDMMDL
CHTASAPEVIKTIAGQISKPSEAIKMRIAHRVRLISGFNNYKLRLQFVQARLQAVSIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TSGNASPRRDNSSDGATGAGSIVYRAYHEHIGGAGSGAGLLDIGGARSSLSGGSSGTS
GWGAGSINRDGSAARPPAIMYPTNSYYARPLAERKAELSSQLPSSLAPKKPSCVTQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERSRQFIEVFDHIYEPESSETASNDADVDNDDDDDDDDDDDDDDDDDDDDDDVEEVQ
SVMDAEIENRIDIALALVSSNNRPRRSAAVNASGDGSANRTNPDDEVDDEDDDVDADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SASGVGGVGANGGTTGQHPNATLCTNGVRRRLLYLDQQYCVCMPTHQNPTEETQMETF
TQDALHWWLEEATLLDMESQTDACLYAAHFLLPHLIKELKAAHQQRKQEEAARQSTTP
                                                                                                                               /translation="MKVDTVKLKKGSSELTAECRELIDELTKRRTRAELLEFLDTVHV
                                                                                                                                                                                                                                                              LLIEHSFSRHLYNSIEHLTVLLSSQNMDIVLAVLNLLYMFSKRSNFIPRLPFEKKELL
                                                                                                                                                                                                                                                                                                                                                                                                                                             IYSNALQDNTDKVLYAGFGEELCELIDKEDVHLVEIRAAVLRTLISMLHFDRNPNVPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GFGSAMERSNAMGGEHVLRDIIRNVLSDRRHAFEFIFNSDDMAVDSEDAAAPGSGVGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APGGARDLNASLLGDVSTSESDSDPSTENDERNEEDEDEDDDAPDEDVDEHSETDVDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DGDPDVDPISGPSAAQAEAYLYERLGSGLMPTPPVGFRVRMNSSIAQPLDIDVNGGNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSGSNACATGSSGGSGQRSSTGGTTASIGAIASAALRPSSGSWMAPDFNFIRISGGDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMGSGPAIGGNANGGDMNVFITPSMSLERAGGAPGSGQTMSELLNEQPTGAGGGGGG
                                                                                                                                                                                                  WIYGKCELYHWIEILDRFDKILEEASRHVNGNEFVLQCDTNFQETDVTLLLHVLNFTT
/protein_id="AAF48495.1"
/db_xref="G1:7293111"
```

```
alignment_scores:

alignment_scores:

alignment_scores:

Calify: 756.50

Calify: 4.274

Caps: 3

Percent Similarity: 89.848

Percent Identity: 71.574

alignment_block:

CS-09-525-867-1 x AE003500/rev

Align seg 1/1 to reverse of: AE003500 from: 1 to: 327446

18 ArgserSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerVa 34

[||||||::: |||||||::: |||
276705 CGCTCTGAATTTGGCCCTGGT.....GCGCCAACAACAAACGCTTCCAG 276662
```

```
NNA HTG 03-JAN-2000
*** SEQUENCING IN PROGRESS ***, in ordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence was identified as CDM:10211288 by the submitter. For more information on this record e-mail to fly@celera.com. * NOTE: This is a "working draft" sequence. * This sequence will be replaced.
* by the finished sequence as soon as it is available and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (30-DEC-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 by the finished sequence as soon as it is available and
the accession number will be preserved.
Location/Qualifiers
1. 83607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Inse
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 83607)
Adams, M. and Venter, J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            276520 TCGGTTTGGCCTGCTGTGCCGTCGAAATGATGCACATCGCTGCTCCGCGT 276471
                                                                                                                                                                                                                                                                                                                                                                       276370 TGCGAAAGGTCTACGACCAAATGCCCGAGCCACGTTGGGTCATCTCCATG 276321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               276220 CGCCAACCGCCGAGGCGCTCATGTACGGCGTTTTGCAGCTGCAGAAGAAG 276171
276521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                            101 TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                 117 rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134 euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                            67
                                                                                                                                              67 uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                         276570 GGACGATCTGCTCAACTGGGGTCGCAAGGGCTCGATCTGGCCACTGACTT
                                                                                            276620 ccgrrcggcaccaaacagrccrccgrrgcggagrggrcacrggccagacr
                                            51 laVal.AlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276170 GTTAAGCGGATGAAGACGCTCCAGATGTGGTATAGGAAG 276132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC019889 83607 bp Drosophila melanogaster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC019889
AC019889.1 GI:6665008
HTG: HTGS_PHASE2.
fruit fly.
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_htg:AC019889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_documentation_block:
LOCUS AC019889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
```

```
alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eukaryota; Mepazoa; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 175124)
Celniker, S.E., Adams, M.D., Kronmiller, B., Tyler, D., Wan, K.H.,
Holt, R.A., Evans, C.A., Gocayne, J.D., Amanatides, P.G., Brandon, R.C.,
Rogers, Y., An, H., Baldwin, D., Banzon, J., Beeson, K.Y., Busam, D.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13834 GAATCCTGCAGCTGCAGAAGAAGGTAAAGCGCATGAGGACCCTGCAGATG 13785
                                                                                                                                                                                                                                                                                                                                                                                                                                                          110 PheArgAlaSerProArgGinSerAspValMetIleValAlaGlyThrLe 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           126 uThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              143 luProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyTyr 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176 lAspileTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160 TyrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVa 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   193 lyIleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGlnIle 209
                                                                                                                                                                                                                                                    60 GlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgAr 76
                                                                                                                                                                                                                                                                                                                   to: 83607
                                                                                                                 Gaps: 0
Percent Identity: 83.766
                                                                                                                                                                                                                    from: 1
/db_xref="taxon:7227"
18268 c 19032 g 23214
                                                                                                                                                                                                                  to reverse of: AC019889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC007856.7 GI:12957650
                                                                                                                                                                alignment_block:
US-09-525-867-1 x AC019889/rev
                                                                                               743.00
4.921
98.052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13784 TGGTACAGGAAG 13773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      210 TrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_in:AC007856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fruit fly.
              23093 a
                                                                                                               Ratio:
Percent Similarity:
                                                                                                  Quality:
                                                                                alignment_scores
                                                                                                                                                                                                                    Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
```

```
Rubin, G.M.

Direct Submission

Laboratory, Ms 64-121, Berkeley, CA 94720, USA

on Feb 17, 2001 this sequence version replaced gi:6633905.

Sequence submitted by:

Berkeley Drosophila Genome Project

Lawrence Berkeley Mational Laboratory, MS 64-121

Berkeley Drosophila Genome Project

Lawrence Berkeley National Laboratory, MS 64-121

Berkeley, CA 94720

This sequences from a whole genome shotgun and from subclones of this BAC and its neighboring clones.

For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu.
Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.W., Dodoson, K., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Ferilera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Liewam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A., Morntosh, T.C., Moy, M., Murphy, B., Nelson, C., Nelson, K.A., Nunoo, J., Phouanenavong, S., Park, S., Patel, S., Petelfer, B., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S.M., Zaveri, J.S., Smith, H.O., Rubin, G.M., and Venter, J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                      Celukker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Celukker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfelifer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Stirska, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zleran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="RPOI-98 (Roswell Park Cancer Institute Drosophila melanogaster BAC library, partial EcoRI in pBACe3.6)"
a 39206 c 39325 g 48784 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22272 GGGATCCCTCTGGCCGCTGACCTTTGGTCTCGCCTCTGCTGCTGCAAA 22321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 GlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76 gSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValGluM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Drosophila melanogaster"
/strain="y; cn bw sp"
/db_xref="taxon:7227"
/chromosome="3R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length: 154
Gaps: 0
Percent Identity: 83.766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: AC007856 from: 1 to: 175124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="BACR05L03 (D795)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="99B-99B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.921
98.052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     743.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x AC007856
                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
```

```
/db_xref="FLYBASE:FBan0002014"
/db_xref="FLYBASE:FBqn0039669"
/bb_xref="TLYBAFE:FBqn0039669"
/protein_id="AAF56901.1"
/db_xref="G1:73015991"
/translation="W18FIXLARNPGOLLLPGSGYLQSQWLRGQKTWPVYDYRCQNPP KWGYSAFGRNQKTWGEWTCARLDDLLNWGRKGSLWPLTFGLACCAVEWMHIAAPRYDM
Simpson, M., Skupski, M.P., Smith, T., Spier, E., Spradling, A.C., Stapleton, M., Strong, R., Sun, E., Svirskas, R., Tector, C., Turner, R., Venter, E., Wang, A.F., Wang, X., Wang, Z.Y., Wassarman, D.A., Weinstock, G.M., Weissenbach, J., Williams, S.M., Woodage, T., Worley, K.C., Mu, D., Yang, S., Yao, Q. A., Yeh, J., Yeh, R.F., Laveri, J.S., Zhan, M., Zhang, G., Zhao, Q., Zheng, L., Zheng, X. H., Zhong, F.N., Zhong, W., Zhou, X., Zhu, X., Smith, H.O., The genome sequence of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DRYGVVFRAS PRQADVLIVAGTLTNKMAPAFRKIYDQMPEPRWYISMGSCANGGGYYH
YSYSVVRGCDRIVPVDIYVPGCPPTABALMYGILQLQKKVKRMRTLQMWYRK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADGPONLTSSAATSPISOASSTPPPPPASAAAQVPANTFHPAAVAHHAHLLQAAHAAA
AAHAQHQAMAAQLRQQQQQADARANSPPASTSSTPSSTPLGSALGSQGNVASTPAKNE
RHSPLGSHTDSELEYDEEMLQDHEADHDEEEDSIVDIEDMNADDSPRSTPDGLDGSGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SLESPHGPPPGSHMOSTILSPAALASGHVPIRPTSALAAAAVAWTGMGGGVPWPGT
RQMPPFGPPGMFPGAGFGGDANEPPRIKCNLRKHKPNRKPRTPFTTQQLLSLEKKFRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="msh gene product; Nucleotide sequence of the Celera
sequence differs from the published sequence for this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MSSGNMTSSNLTNLSPSHPAGLNALASPTSPSALLLAHQQHLLQ
QHQQHQQQQQQQQAAALQLAAVHPPAHHLHKTTSRLSNFSVASLLADTRPRTPPNQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 join(46705. .48163,54471. .55572)
/gene="msh"
/note="Nucleotide sequence of the Celera sequence differs
from the published sequence for this transcript."
/product="Cry8101"
/db_xref="FLYBASE:FBan0001897"
                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 224100)
Adams,M.D., Celniker,S.E., Gibbs,R.A., Rubin,G.M. and Venter,C.J.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (21-MAR-2000) Celera Genomics, 45 West Gude Rockville, MD, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1. .224100
/organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/chromosome="3R"
<6113. .56751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="FLYBASE:FBG0002849"
join(47104. .48163,54471. .54808)
/gene="msh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="CT6471"
/db_xref="FLYBASE:FBgn002014"
/db_xref="FLYBASE:FBgn0039669"
<6113. >6751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /map="99B4-99B5"
/db_xref="FLYBASE:FBan0001897"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="FLYBASE:FBan0001897"
/db_xref="FLYBASE:FBan0002849"
/protein_id="AAF56902.1"
/db_xref="G1:7301792"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="FLYBASE:FBgn0002849"
<46705. .>55572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="FLYBASE:FBan0002014"
/db_xref="FLYBASE:FBgn0039669"
6113. .6751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="CG2014"
/note="CG2014 gene product"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /map="99B3-99B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <6113. .>6751
/gene="CG2014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="msh"
/note="CG1897"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="CG2014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transcript
                                                                                                                                                                                                                                                                                                                                       20196006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                       MEDLINE
                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fruit fly.

Everyotal melanogaster

Eukaryota, Metazoa, Arthropoda; Tracheata; Hexapoda; Insecta;

Eukaryota; Metazoa, Arthropoda; Tracheata; Hexapoda; Insecta;

Eukaryota; Metazoa, Arthropoda; Tracheata; Brachycera;

Eukaryota; Metazoa; Endopterygota; Diptera; Brachycera;

Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

I (Bases 1 to 224100)

RS Adams, M.D., Celniker, S.E., Holt, R.A., Evans, C.A., Gocayne, J.D.,

Amanatides, P.G., Scherer, S.E., Li, P.W., Hoskins, R.A., Galle, R.F.,

Brandon, R.C., Rogers, Y.H., Blazej, R.G., Champe, M., Pfeiffer, B.D.,

Wiklos, G.L., Abril, J.F., Aqbayani, A., An.H.J.,

Andrews-Fennkoch, C. Baldwin, D., Ballew, R.M., Basu, A.,

Baxendale, J., Bayraktaroglu, L., Besaley, E.M., Besson, K.Y.,

Baxendale, J., Butler, H., Cadleu, E., Center, A., Chandra, I.,

Cherry, J.M., Cawley, S., Dahlke, C., Davenport, L.B., Davies, P., de

Pablos, B., Delcher, H., Cadleu, E., Conter, A., Chandra, I.,

Cherry, J.M., Cawley, S., Dahlke, C., Perraz, C., Ferraz, C.,

Fleichmann, W., Fosler, C., Gabriellan, A.E., Gorrell, J.H., Gu, Z.,

Guan, P., Harris, M., Harris, N. L., Hoston, K.A., Howland, T.J.,

Hernander, J.R., Houck, J., Hostin, D., Heiman, T.J.,

Hernander, J.A., Ketchum, K.A., Liu, X., Mattei, B., McIntosh, T.C.,

Kravitz, S., Kulp, D., Lai, Z., Lasko, P., Lei, Y., Levitsky, A.,

Li, J., Li, Z., Liang, Y., Lin, X., Liu, X., Mattei, B., McIntosh, T.C.,

Murshy, D.M., Nelson, D.L., Nelson, D.L., Murphy, B., Murphy, E.,

Musskern, D.B., Woshrefi, A., Mount, S.M., Moy, M., Murphy, B., Willer, S., Rulp, J., Puri, V., Rese, M.G., Renner, K., Saden-Kiames, R.,

Saunders, R.D., Scheeler, F., Shen, H., Shue, B.C., Siden-Kiames, I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AE003770 224100 bp DNA INV 05-OCT-2000 Drosophila melanogaster genomic scaffold 142000013386035 section 95 of 105, complete sequence.
AE003770.1 GI:7301790
                                                                                                                                                                                                                                                                                                                                                                                                                                                               22571
                                                                                                                                                                            160 TyrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVa 176
                                                                                                                                  uThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lAspIleTyrIleProGlyCysProProThrAlaGluAlaLeuLeuTyrG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193 lyIleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGlnIle 209
      110 PheArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLe 126
                                                22372 TICCGAGCAICTCCTCGCCAGGCGGACGIGCTCATCGIGGCCGGAACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        22522 TACCACTACTCCTACTCGGTGGTTCGCGGCTGCGATCGCATTGTTCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22672 TGGTACAGGAAG 22683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210 TrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: gb_in:AE003770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
Locus AE003770 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176
```

CDS

```
AC009988 311043 bp DNA INV 04-SEP-1999
Drosophila melanogaster, chromosome 3R, region 99A7-99B5, BAC clones BACR48K01 and BACR48023, complete sequence.
AC009888 AC006693 AC007081
AC009888.1 GI:5822961
                         (51015)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6587 TACCACTACTCCTACTCGGTGGTTCGCGGCTGCGATCGCATTGTTCCGGT 6636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6337 GGGATCCCTCTGGCCGCTGACCTTTGGTCTCGCCTGCTGCTGCAAA 6386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6637 GACATCTACGTGCCCGGATGTCCGCCCACGCCGAGGCCTTAATGTACG 6686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6687 GAATCCTGCAGCTGCAGAAGAAGTAAAGCGCATGAGGACCCTGCAGATG 6736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          143 luProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyr 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160 TyrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVa 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176 lAspileTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93 etmetHisMetAlaAlaProArgTyrAspMetAspArgPheGlyValVal 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          193 lylleLeuGlnLeuGlnArgLyslleLysArgGluArgArgLeuGlnIle 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60 GlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgAr 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76 gSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValGluM 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6537 AGCCGAGATGGGTCATTTCCATGGGCAGTTGCGCCCAATGGTGCGCGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126 uThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProG
EGLPPGGGLQSKYHVIERTFKQEFPDRPCESPTH"
complement(join(89615. .90119,90172.
/gene="CG7568"
                                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                                                                                           Percent Identity: 83.766
                                                                /product="CT6427"
/db_xref="FLYBASE:FBan0007568"
/db_xref="FLYBASE:RBgn0039673"
/evidence=not_experimental
complement(<69615. >91012)
/gene="CG7568"
                                                                                                                                                                                                                                            /db_xref="FLYBASE:FBan0007568"
/db_xref="FLYBASE:FBgn0039673"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to: 224100
                                                                                                                                                                                                                                                                                                                                               Length:
                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: AE003770 from: 1
                                                                                                                                                                                                                  /map="99B5-99B7"
                                                                                                                                                                                                                                                                                                                                            743.00
4.921
98.052
                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x AE003770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6737 TGGTACAGGAAG 6748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210 TrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: gb_in:AC009888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_documentation_block:
Locus AC009888 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                 Quality:
                                                                                                                                                                                                                                                                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                       alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
                            mRNA
                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(82216. .82539,83590. .84481,84545. .84662,87559. .87664,
87737. .87791,88482. .88621,94828. .94899)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="FLYBASE:FBan0001906"
/db_xref="FLYBASE:FBgn0039672"
join(83669. .84481,84545. .84662,87559. .87664,87737. .87791,
88482. .88496)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GLGDALPDMSFFAVFDGHAGCKVSEHCAKHLLESIISTEEFIGGDHYKGIRTGFLRID
VENERLPEFFRESEKCGGTTANCAPYGLTQVYIANCGDSRAVLCRQGVPVFATODHKP
ILPEEKERIY NAGGSVMIKKVNGTLAVSRALGDYDFKNVKEKGQCEQLVSPEPETFCQ
SRQDSDEFLVLACJGTUDVMSNEDVCSFIHSRMRYTSNLVSIANQVVDTCLHKGSRDM
MSIIIIAFPGAPKPTEEAIEAEHRLEKQIEKIIRDEIESSKITDYVDLLKCLQNRDDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MFSKFSLLAVVLAFGLVSGLSLSLVVKPSKLKLPTNKKILGLOQ
QTEELAARDFGTSVRCFDYTY PI INGLSAQYELDYKKCVKDVDTASELVLAANNSTLF
QTGASGDRGCNTFFDCSSTVDFVLAFECFANVGAEGSKIMYQVSANATEAAVQIKIHL
QTLDSQLESCLNYSEDFVEGTSLYGELNKCLAGAFVPQDTTANWYTTA"
complement(79354. .80123)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MFAKQAKILVFCLSLGLSLAVKLQIPFRPDAHIQELQLQSRELA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EVHSDHSTQCFSIYKPKLAKIADQFETNFTACISAYDNCTSHISEKYAEDRQILLRSA
NIGCSYPNSNCQVWTLEQQPLDTVVSRLECASTNSAESSKTFYAISANATQIAVQIQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MGGFLDKPKTAKHNDEGEGNKLLFGVSSMQGWRSEMEDAYYARA
  KQYLSIAERAEFSSSLRLTETQVKIWFQNRRAKAKRLQEAEIEKIKMAALGRGAPGAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QYTILESRKSVCINDANRSYVEDTSDTYELLNNCLKNGPTTTTCNPLTYPTTTATTT
                                            complement(join(77651. .77884,77983. .>78412))
                                                                                                                                                                                                                               /db_xref="FLYBASE:FBan0007567"
/db_xref="FLYBASE:FBgn0039670"
complement(join(77651. .77884,77983. .78384))
/gene="CG7567"
                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="FLYBASE:FBan0007567"
/db_xref="FLYBASE:FBgn0039670"
/protein_id="AAF56903.1"
/db_xref="G1:7301793"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="FLYBASE:FBan0011470"
/db_xref="FLYBASE:FBgn0039671"
/protein_id="AAF56904.1"
/db_xref="G1:7301794"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FLYBASE:PBan0001906"
/db_xref="FLYBASE:FBgn0039672"
<82216. >94890
                                                                                                                    /db_xref="FLYBASE:FBan0007567"
/db_xref="FLYBASE:FBgn0039670"
complement(<77651. .>78412)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="FLYBASE:FBan0001906"
/db_xref="FLYBASE:FBgn0039672"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="FLYBASE:FBan0011470"
/db_xref="FLYBASE:FBgn0039671"
complement(<79354. .>80123)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="FLYBASE:FBan0011470"
/db_xref="FLYBASE:FBgn0039671"
complement(79388. .80080)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="CG11470"
/note="CG11470 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="CG1906 gene product"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                            /note="CG7567 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAF56905.1"
/db_xref="GI:7301795"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'product="CT36281"
                                                                                                  /product="CT8429"
                                                                                                                                                                                                                  /map="99B5-99B6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /map="99B5-99B6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /map="99B5-99B7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <82216. .>94899
/qene="CG1906"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="CG11470"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="CG11470
                                                                                                                                                                                             /gene="CG7567"
                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=
                                                   mRNA
                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
```

CDS

CDS

```
231793 TGGTACAGGAAG 231804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name: gb_pl:BONADHPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
Locus BONADHPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pogson, B.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95334517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                    126
                                                                                                                                                                                          110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pteryota; Neoptera; Endopterygota; Diptera; Brachycera;

Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

I (bases 1 to 311043)

E (elniker,S.E., Agbayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G.,

Butenhoff,C., Champe,M., Chavez,C., Chew,M., Citesiolka,L.,

Hinkle,A., Hoskins,R.A., Houston,K.A., Hummasti,S.R., Karra,K.,

Kearney,L., Kim,E., Lee,B., Lewis,S., Li,P., Ling,H.,

Moshrefi,A.R., Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S.,

Pfeiffer,B., Poon,L., Richards,S., Sequeira,A., Sethi,H.,

Sylrskas,R.R., Wan,K.H., Webster,D., Woolley,P., Yang,S., Yee,M.,

Sequencing of Drosophila chromosome 3R, region 9947-9985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence submitted by:
Berkeley Drosophila Genome Project
Lawrence Berkeley National Laboratory, MS 64-121
Berkeley, CA 94720
For further information about this sequence, including its location
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgpefruitfly.berkeley.edu.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (04-SEP-1999) Berkeley Drosophila Genome Project, MS 64-121, Lawrence Berkeley National Laboratory, One Cyclotron Road, Berkeley, CA 94720, US on Sep 4, 1999 this sequence version replaced gi:5713324 gi:5670685.
                                                                                                                                                                                                                                                                                                                                         Onpublished

(bases 1 to 310043)

(bases 1 to 310043)

(bases 1 to 40043)

(clinker,S.E., Agabayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G., Butenhoff,C., Champe,M., Chavez,C., Chew,M., Ciesiolka,L., Doyle,C.M., Farfan,D.E., Galle,R., George,R.A., Harris,N.L., Hinkle,A., Hoskins,R.A., Houston,K.A., Hummasti,S.R., Karra,K., Karra,K., Karrey,L., Kim,E., Lee,B., Lewis,S., Li,P., Ling,H., Moshrefi,A.R., Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfeiffer,B., Poon,L., Richards,S., Sequeira,A., Sehi,H., Siran, K., Man, K.H., Webster,D., Woolley,P., Yang,S., Yee,M., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            231343 GGCGAGTGGACCTGTGCCAGGTTGGATGACCTGCTAAACTGGGGACGCAA 231392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 GlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgAr 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length: 154
Gaps: 0
Percent Identity: 83.766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to: 311043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68467 g 86791 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68661 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        743.00
4.921
98.052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AC009888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x AC009888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
         ORGANISM
                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
```

```
Direct Submission
Submitted (07-SEP-1994) B.J. Pogson, University of Arizona, Dept of
Plant Sciences, 303 Forbes Hall, Tuscon 85721, Arizona, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B.oleracea mRNA for PSST subunit of NADH:ubiquinone oxidoreductase.
X82274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, Rosidae, eurosids II; Brassicales, Brassicaceae, Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleotide sequence of a cDNA clone from broccoli with high identity with the PSST subunit of NADH:ubiquinone oxidoreductase Plant Physiol. 108 (2), 859-860 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NADH-ubiquinone oxidoreductase; NADH:ubiquinone oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      231643 TACCACTACTCCTACTCGGTGGTTGTTGTTGTTGTTCCGGT 231692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231693 GGACATCTACGTGCCCGGATGTCCGCCCACCGCCGAGGCCTTAATGTACG 231742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231743 GAATCCTGCAGCTGCAGAAGAAGGTAAAGCGCATGAGGACCCTGCAGATG 231792
                                                        231393 GGGATCCCTCTGGCCGCTGACCTTTGGTCTCGCCTGCTGCGCCGTCGAAA 231442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pogson, B.J., Downs, C.G., Davies, K.M., Morris, S.C. and Buchanan-Wollaston, V.
                                                                                                                                                                                                                                                                                                                                                  uThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              176 lAspileTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrG 193
                                                                                                                                                                                                                                 PheArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLe 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TyrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVa 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193 lylleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGlnIle 209
                                                                                                                                                                                                                                                                       231493 TTCCGAGCATCTCCTCGCCAGGCGGACGTCATCGTCGTGGCCGGAACCCT
231543 GACCAACAAGATGGCACCGGCCTTTCGGAAGATCTACGACCAGATGCCCG
                                                                                                                etMetHisMetAlaAlaProArgTyrAspMetAspArgPheGlyValVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Brassica oleracea'
/cultivar="Shogun"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /dev_stage="mature_plant"
/tissue_type="florets"
/clone="pBROC4"
35. .682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:3712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 911)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 911)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X82274.1 GI:562281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     subunit PSST.
Brassica oleracea.
Brassica oleracea
```

```
polyA_signal
BASE COUNT 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                           /protecti_id="Cas57725.1"
/db_xref="G1:56282"
/db_xref="G1:56282"
/db_xref="G1:56282"
/translation="Mamitrania-theory specific sp
      ubiquinone oxidoreductase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA PLN 16-MAR-1999 NADH-ubiquinone oxidoreductase subunit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137 rececededacaacacegacrecaracaceagaceaggreercearegae 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187 cresecrececeses arcreres as a consequence of the consequence of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99 oArgTyrAspMetAspArgPheGlyValValPheArgAlaSerProArgG 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116 lnSerAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaPro 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133 AlaLeuArgLysValTyrAspGlnMetProGluProArgTyrValValSe 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     437 GCTCTTCGCAAGGTTTATGACCAGATGCCGGAGCCAAGGTGGGGTGATTC 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerV 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGGGAAGTTGTGCCAACGGAGGTGGATATTATCATTACTCCTACTCGG 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183 CysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnAr 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66 ysLeuAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMet 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83 ThrPheGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaPr 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33 SerValAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49 aArgAlaValAlaProLysProSerSerArgGlyGluTyrValValAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gLyslleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length: 181
Gaps: 0
Percent Identity: 73.481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          637 GAAAATCAACAGGCGCAAGGATTTCTTGCACTGGTGGAACAAG
/product="PSST subunit of NADH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
LOCUS STPSST 935 bp
DEFINITION S.tuberosum mRNA for 1
ACCESSION X96671 GI:1235606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to: BONADHPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-525-867-1 x BONADHPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             736.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: gb_p1:STPSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
```

```
/protein_id="CAA65451.1"

/db_xreff="G1:1235607"

/db_xreff="SWISS-PROT:043844"

/db_xreft="SWISS-PROT:043844"

ApproxMTPAFLIARNAKLITGTAFLQRAATIHTTLPSLSQQPASSPATSGG
AQPPEAMTPAGISKPAFYLGKVDDLMWARRGSIMPMTFGLACCAYEMMHAGAARYD

FDRFGIIFRPSPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRWVISMGSCANGGGYY
                                                                                                                                                                                                                                                                                                                                                                                           Genbiologische Forschung
                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; euasterids I; Solanales; Solanaceae; Solanum.

(bases I to 915)
Heiser, V., Brennicke, A. and Grohmann, L.
Fre plant mitochondrial 22 kDa (FSST) subunit of respiratory chain complex I is encoded by a nuclear gene with enhanced transcript levels in flowers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HYSYAVVRGCDRIVPYDIYVPGCPPTAEALLYGILQLQKKINRRKDLLMWWTG"
50. .142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77 crecreacegeacegececerreraagegeegecacearcacae 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32 nSerValAlaThrAspGlyProSer...SerThrGlnProAlaLeuProL 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 LeuArgSerSerValGlyProAlaValGln...AlaArgGlyValHisGl 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ... SerSerArgGlyGluTyrValValAlaLysLeuAspAspLeuValAs 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="NADH-ubiquinone oxidoreductase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            165 CGGCCACTTCAGGTGGCGCACAGCCTCCGTCCATGAATACACCAGCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="22kDa mitochondrial complex I"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (15-MAR-1996) V. Heiser, Inst.f.
Berlin, Ihnestr. 63, D-14195, Berlin, FRG
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67.961
NADH-ubiquinone oxidoreductase; PSST gene
                                                                                                                                                                                                                                                              Plant Mol. Biol. 31 (6), 1195-1204 (1996)
97071689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .935
∕organism="Solanum tubėrosum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="green leaves"
50. .691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cultivar="Desiree"
/db_xref="taxon:4113"
/clone_lib="lambda ZAP II"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /évidence=experimental
143. .688
/gene="85gr"
883. .888
a 212 c 221 g 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48 ysalaArgalaValAlaProLysPro.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to: 935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /EC_number="1.6.5.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="PSST"
50. .691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="PSST"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="PSST"
                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 935)
                       potato.
Solanum tuberosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     732.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to: STPSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-525-867-1 x STPSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ratio:
                                                                                                                                                                                                                                                                                                                                            Heiser, V
```

```
/product="NADH ubiquinone oxidoreductase PSST subunit"
/product="NADH ubiquinone oxidoreductase PSST subunit"
/db_xref="d1:6007781"
/db_xref="d1:6007781"
/translation="MALLTRIPTRIPTRIPPSSHRILSLHTTLPSLSPDTAATPAPYSR
PPPPGTSSTAGISKTAMEVISKVDDLMNWARRGSIWPMTFGLACCAVEWMHTGAARYD
LDRFGITERPSPRQSDDMIVAGTLTNRWAPALRKVYDDMPEPRWVISKGSCANGGGYY
LDRFGITERPSPRQSTAGISKTAMEVIVGLLQCKKINRRKDFLLWWTK"
275 c 202 g 305 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251 GGTCCATTIGGCCCAIGACCTICGGGCTCGCTIGCTGCGCGGGGAGTG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cc.........GACACGGCGGCACACCAGCACCTACTCTCGCCCA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             177 spileTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrGly 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGlnIleTr 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72 ATCTCACCGCATCCTCCCACCACCACCACTCTC...CCCTCTCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       erSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValGluMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MethisMetalaalaProArgTyrAspMetAspArgPheGlyValValPh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rHisTyrSerTyrSerValValArgGlyCysAspArgIleValProValA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 .GlyPheArgIleLeuGlyLeuArgSerSerValGlyProAlaValGlnA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27 laArgGlyValHisGlnSerValAlaThrAspGlyProSerSerThrGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60 yGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110 eArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeuT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22 ATGGCTCTTCTAACAAGAACGGCCACGCGCCTCCTCAACTCGCACCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44 ProAlaLeuProLysAlaArgAlaValAlaProLysProSerSerArgGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157 CCG.....ccTcCcTcCTcCTcCTcCAccGcCGGGATCTCAAAGACGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MetAlaValLeuSerAlaProGlyLeuArg.......
                                                                                                                                                                                                                                                                                            Length: 220
Gaps: 4
Percent Identity: 63.182
                                                                                                                                                                                                                                                                                                                                                                                                                                      to: 1021
/gene="PSST"
/note="complex I protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                      from: 1
                                         /codon_start=1
                                                                                                                                                                                                                                                                                            731.00
3.995
83.182
                                                                                                                                                                                                                                                                                                                                                                                                                                   to: AF185271
                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-525-867-1 x AF185271
                                                                                                                                                                                                                                                                                                   Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                 239
                                                                                                                                                                                                                                                                              alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1
                                                                                                                                                                                                 COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                               BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lupinus luteus
Sukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots,
Rosidae, eurosids I; Fabales, Fabaceae, Papilionoideae, Genisteae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Discreption of Molecular Biology, Miedzychodzka: Institute of Molecular Biology, and Biotechnology, Miedzychodzka:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lupinus.

1 (bases 1 to 1021)
Piekna, D., Sikorski, M. and Augustyniak, H.
L. luteus mRNA for PSST subunit of the NADH:ubiquinone
Oxidoreductase complex
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           189 laLeuLeuTyzGlyIleLeuGlnLeuGlnArgLysIleLysArgGluArg 205
                                                                               265 TIGGGCTCGTCGTGGGTCCATTIGGCCCATGACTTTGGATTGGCTTGTT 314
                                                                                                                                  ysAlaValGluMetMetHisMetAlaAlaProArgTyrAspMetAspArg 105
                                                                                                                                                         PheGlyValValPheArgAlaSerProArgGlnSerAspValMetIleVa 122
                                                                                                                                                                                                                                        lAlaGlyThrLeuThrAsnLysMetAlaProAlaLeuArgLysValTyrA 139
                                                                                                                                                                                                                                                                                                                                415 recregracactraccaacaaaredccccrecrecreceaagercrare 464
                                                                                                                                                                                                                                                                                                                                                                       spGlnMetProGluProArgTyrValValSerMetGlySerCysAlaAsn 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlyGlyGlyTyrTyrHisTyrSerTyrSerValValArgGlyCysAspAr 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gIleValProValAspIleTyrIleProGlyCysProProThrAlaGluA 189
                215 ATATCTAAACCGGCTGAGTATGTGATATCTAAGGTCGACGATCTGATGAA 264
                                                                                                                                                                                                                                                                                                                                                                                              615 CTCTTCTGTACGGAATTCTTCAACTGCAGAAGAAGATAAATAGGCGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nTrpAlaArgArgSerSerLeuTrpProMetThrPheGlyLeuAlaCysC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Lupinus luteus"
/db_xref="taxon:3873"
/tissue_type="root"
1..1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Poznan 60-371, Poland
Location/Qualifiers
1. .1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF185271.1 GI:6007780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="PSST"
22. .663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA, complete cds.
AF185271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206 ArgLeuGlnIleTrpTyr 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              665 GATITGCTTATGTGGTGG 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yellow lupine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: gb_p1:AF185271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                      72
                                                                                                                                  83
                                                                                                                                                                        315
                                                                                                                                                                                                               106
                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                                                                                                                                                                                                                                                                                                                               465
                                                                                                                                                                                                                                                                                                                                                                                                                                                    156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
```

43

9

110

400

160

210 pTyrArgArg 213 |::: | 551 GTGGACAAAG 660

٠.

10: US-09-525-867-9 10: US-09-50-9 10: US-09-9	3.6
US-09-525-867-9 824 1	nucteic - nucteic search, using sw model on: February 12, 2002, 17:41:45; Search time 1339.84
e: 0S-09-525-867-9 824 824 11 cgctcgagcgcf Gapon 60.0, Gag Gap	10145.746 Million cell updates/sec
of hits satisfying of length: 0 of hits satisfying of length: 200000000 og length: 2000000000 og length: 2 ob hits: 4 ob length: 4 ob l	US-09-525-867-9 score: 824 1 cygctcgagcgctcgagcgcgggcaaaaaaaaaa 82
of hits satisfying of lits satisfying of length: 2000000000000000000000000000000000000	table: OLIGO_NUC Gapop 60.0 , Gapext 60
of hits satisfying of length: 0 eq length: 0 eq length: 200000000 ling: Listing first 4; CenEmbl: * 1: gb_ba: * 2: gb_lng: * 3: gb_lng: * 4: gb_ow: * 6: gb_per: * 7: gb_pr: * 10: gb_pr: * 11: gb_pr: * 11: gb_pr: * 12: gb_pr: * 13: gb_rov: * 13: gb_rov: * 14: gb_rov: * 15: em_lun: * 16: em_lun: * 17: em_lun: * 18: em_lun: * 18: em_lun: * 19: em_ow: * 22: em_pr: * 22: em_pr: * 23: em_pr: * 24: em_lun: * 25: em_pr: * 26: em_st: * 27: em_pr: * 28: em_lun: * 29: em_pr: * 29: em_pr: * 29: em_pr: * 20: em_ow: * 20: em_ow: * 20: em_ow: * 20: em_lun: * 20	: 1472140 seqs, 8248589755
of hits satisfying of length: 2000000000000000000000000000000000000	size :
DB seq length: 0 DB seq length: 2000000000 cessing: Listing first 4:	of hits satisfying chosen parameters: 29
first 4.5	DB seq DB seq
GenEmbl:* 1	first 45
	GenEmbl:* 1: 9b.ba:* 2: 9b.lntg:* 4: 9b.ov:* 6: 9b.pat:* 7: 9b.ph:* 8: 9b.pr:* 10: 9b.ro:* 11: 9b.pr:* 11: 9b.pr:* 12: 9b.pr:* 13: 9b.pr:* 14: 9b.ro:* 11: 9b.ro:* 12: 9b.yr:* 13: 9b.pr:* 14: 9b.ro:* 15: em.ph:* 16: em.lnm:* 17: em.lnm:* 18: em.lnm:* 18: em.lnm:* 19: em.lnm:* 22: em.pr:* 23: em.pr:* 24: em.pr:* 25: em.pr:* 26: em.pr:* 27: em.pr:* 28: em.lnm:* 29: em.lnm:* 30: em.lng.lnm: 31: em.lng.lnm: 32: em.lng.lnm: 33: em.lng.lnm: 34: em.lng.lnm: 35: em.lng.lnm: 36: em.lng.lnm: 36: em.lng.lnm: 37: em.lng.lnm: 38: em.lnm: 38: em.lng.lnm: 38: em.lnm: 38: em.lng.lnm: 38: em.lnm: 38:

SUMMARIES

	Resul	S :	r re	tc	11 1	i		E : 9
		-101 W Z	366	0 4 4 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	787	, , ,	BCOUI/15 BC005954 AF06512	BC001/15 HOMO SAPI BC005954 HOMO SAPI AF060512 HOMO SAPI
				 	75			
	υυ	٥٢	ກແ		601			ξģ
	O	യ ഗ	8 8 7 8		6880 7263			유 유
		10	90 1		849			요 :
	ပပ	12	27		2000			8
		13	27		6 C			ည် ရှိ
	O	15	27		00	0		E. E.
	O	16 17	27		355 5898	0		D88190 Rattus norv AC020598 Homo sapi
		18	27		20			BAC
		20	7 9 7		9 8 9 9			Lap Part
		21	25		91			X82274 B.oleracea
		23	9 79		961			AF029365 Rhodobact
		24	56	-	3870			AC068923 Oryza sat
		26 26	o 9 7 7		√			ACUSI//4 Uryza sat AP003769 Oryza sat
		27	50.0		292			AF279902 Lupinus 1
	c	2 C	2 C		יטר מע			ACUZINUL Genomic S ACUZINUL Genomic S
	טנ	300	2 12		7948			AC083863 Homo sapi
		31	2.2		22			AY022669 Oryza sat
		75	4 4		N O			AIUZZBUS UIYZB SBI AIDSOSKO HOMO Gani
) (C) :	24		0			L10373 Human (clon
		35	4.5		82			AB062057 Homo sapi
	O	37	7 7		031			AE008339 Agrobacte
		80 6	24		1089			AE005781 Caulobact
		თ ი	4.5		1627			AP003993 Oryza sat
	ပ	4. 44. □ □	4 4		3948			AP003513 Oryza sat
		4.2	24		4101			AC037197 Oryza sat
	ပ	4 4 4	2 4		00			AC091811 Oryza sat AC026758 Oryza sat
		45	24		7802			AC025783 Oryza sat
							ALIGNMENTS	
	RESU	TLT 1						
	BCOC LOCU	BC001715 LOCUS	BC00	-	7.0	94 bp	mRNA PRI	12-JUL-2001
	1	NOT THE	IMAG	0	3064, mR	mRNA,	complete cds.	20.00
	ACCE	SSION	BC001715 BC001715	1715 1715.1	GI:12	8045		
	KEYN SOUF OR	KEYWORDS SOURCE ORGANISM	MGC. human Homo	n. Sapie	S			
	;		Euka	ryota; alia;	Metazo Eutheri		Chordata; Craniata; Vertebr Primates; Catarrhini; Homin	rata; Euteleostomi; nidae; Homo.
. •	REFE AU	REFERENCE AUTHORS	1 Stra	bases usberg	1 to 79 ,R. mission			
	15		Subm	Submitted (16 Gene Collection	2 t 2 t 3 t 5 t 5 t 5 t 5 t 5 t 5 t 5 t 5 t 5	U Q (1) National Insti-	Health, Mammalian National Cancer
	i		USA	דרתרב,	. נ	P ;	אחסי שברוופס	a, 18002 Un , 20
	X.	REMARK	HTN		Project U	URL:	http://mgc.nci.nih.gov	

```
Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                            674
                       361
                                                          494
                                                                                                                                                                                                                                                                                                                                                                                                                           794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                        9
                                                                                       g
                                                                                                                             ò
                                                                                                                                                                g
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                       Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov series: IRAL Plate: 6 Row: b Column: 12
This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 7688970.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MAVLSAPGLRGFRILGLRSSVGPAVQARGVHQSVATDGPSSTQP
ALPRARAVARKPSSRGEYVVARLDDLVNWARRSSIAPMTFGLACCRVEMMHWAAPRYD
MDFRGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYY
HYSYSVWYRGDRIVYDYTPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR"
262 c 236 g 126 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                         Steven Jones, Jennifer Asano, Ian Bosdet, Yaron Butterfield, Susanna Chan, Readman Chiu, Chris Fjell, Erin Garland, Ran Guin, Letticia Hsiac, Martin Krzywinski, Reta Kutsche, Oliver Lee, Soo Sen Lee, Victor Ling, Carrie Mathewson, Candice McLeavy, Steven Ness, Pavan Pandoh, Anna-Liisa Prabhu, Parvaneh Saeedi, Jacqueline Schein, Duane Smailus, Michael Smith, Lorraine Spence, Jeff Stott, George Yang, Scott Zuyderduyn, Marco Marra,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCGAGTATGTGGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 CAAGCAGCACCCAGCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGCAGCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tgtggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagcac 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccaagatggcggtgctgtcagctcctggcctgcggcttccggatccttggtctgcgct 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCGCTACGACATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTCCGACG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacg 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAAGATGGCGGTGTCAGCTCCTGGCCTGCGCGGCTTCCGGATCCTTGGTCTGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caagcagcacccagcctgcccaaaggccagagccgtggctcccaaacccagcagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggggcgagtatgtggtggccaagctggatgacctcgtcaactggggcccgccggagttctc
                                                      cDNA Library Preparation: Rubin Laboratory cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Genome Sequence Centre,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 794;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="Similar to CG9172 gene product"
/protein_id="AAH01715.1"
/db_xref="GI:12804589"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="Brain, neuroblastoma"
/loloe_lib="NH_MOG_19"
/lab_host="DHIOB-R"
/note="Vector: pOTB7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
o
                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="MGC:886 IMAGE:3503064"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11arity 100.0%; Score 736; DE 12arity 100.0%; Pred. No. 0; Conservative 0; Mismatches
                                                                                       DNA Sequencing by: Genome Sequenc
BC Cancer Agency, Vancouver, BC,
info@bcgsc.bc.ca
               Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
cDNA Library Preparation: Ruk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 736;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    374
                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE CO
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          αd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
CDNA Library Preparation: CLONTECH Laboratories, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. CONSORTHUM (LLNL)
DNA Sequencing droup at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305
Mtp://www-shgs.stanford.edu
Contect: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pe found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata; Craniata; Vertebrata; Euteleostomi;
Primates; Catarrhin; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
Submitted (02-APR-2001) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clone distribution: MGC clone distribution information can be four through the I. M.A.G.B. Consortium/LLNL at: http://image.llnl.gov Series: IRAL Plate: 21 Row: K Column: 20 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF analysis, Similarity but not identity to protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BC005954 787 bp mRNA PRI 12-JUL-2001
Homo sapiens, clone MGC:14592 IMAGE:4276489, mRNA, complete cds.
BC005954
                                                                                                                                                                                                          673
                                                                                                                                                                                                                                                                                                                                                                                 099
ggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgcc 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           734 gocgccggagcctgtcgcccgtccccagcctgcttgtgtcccgtgaggttgtcaat 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661 GCCGCCGGAGCCTGTCGCCGTCCTGTCCCCAGCCTGCTTGTGTCCCGTGAGGTTGTCAAT 720
                                                                                                                              421 ACCAGATGCCGGAGCCGCGTACGTGGTCTCCATGGGGAGCTGCGCCCAACGGAGGAGCT
                                                                                                                                                                                                                                                                                                                                         614 acateceaggetgeceacetaeggeegaggeeetgetetaeggeateetgeagetgeaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601 GGAAGATCAAGCGGGAGCGGAGGCTGCAGATCTGGTACCGCAGGTAGCGCCGCCGCCGCC
                                                                                             accagatgccggagccgcgccgcgtggtctccatggggagctgcgccaacggaggagct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="MCC:14592 IMAGE:4276489"
/tissue_type="Brain, primitive neuroectodermal"
/clone_lib="NIH_MGC_56"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
Email: cgapbs.r@mail.nih.gov
Tissue Produrement: ArCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BC005954.1 GI:13543602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
1 (bases 1 to 787)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aaacctgccctcgggc 809
```

```
GI:12001973
                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                    44.4%;
Homo sapiens clone AF060512
                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 416; Conserv
                               AF060512.1
                                                                                                                                                                                                                                                                                                 ø
                                                                                                                                   R.China
                                                                                                                                                                                                                                                                                                120
                                                 human.
   LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                          ORGANISM
                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                         70
                                                                                                                                                                                                                                                                                                                                                                                                             130
                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                JOURNAL
                                                                                                                                                                                                            CDS
                                                                                                                                            FEATURES
                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                            δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dβ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \dot{\Omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                       //Translation="MAVLSAPGLRGFRILGLRSSVGLAVQARGVHQSVATDGPSSTQPALPKARAVARKPSSRGEYVVARLDDLVNWARRSSLAPMTFGLACCRVEWHHAAPRVD MDRFGVVFRASPRQSDVMIVAGTLINKWAPALRKVYDOMPEPRYVSMGSCANGGGYYHYSYSSVRGCDRYDZIFFGCPFTARALLYGILGLQRKIKRERRLQIMYRR"

262 c 244 g 129 t
                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 658
                                                                                                                                                                       118
                                                                                                                                                                                                           178
                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                           358
                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                418
                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                    478
                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                         538
                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                     Gaps
                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                     gtctgaaggccgaggccaagatggcggtgctgtcagctcctggcctgcgggcttccgga
                                                                                                                                                                                                                     CCCCCCGGAGTTCTCTGTGGCCCATGACCTTCGGCCTGGCCTGCGCCTGGAGATGA
                                                                                                                                                                                                                                                                                                                                                              421 TTCGCAAGGTCTACGACCAGATGCCGGAGCCGCGTACGTGGTCTCCATGGGGAGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCTGAAGGCCGAGGCCGAGATGGCGGTGTCAGCTCCTGGCCTTGCGGGCTTCCGGA
                                                                                                                                                                                                          teettggtetgegeteeagegtgggeeeggetgtgeaggeaegaggtgteeateagageg
                                                                                                                                                                                                                                                tggccaccgatggcccaagcagcagcccagcctgcccaaaggccagagccgtggctc
                                                                                                                                                                                                                                                          cccgccggagttctctgtggcccatgaccttcggcctggcctgcgccgtggagatga
                                                                                                                                                                                                                                                                                                                                                                                                     cycyccaytccyacytcatyatcytygccygcacactcaccaacaayatygccccaycyc
                                                                                                                                                                                                                                                                                                                                                                                                               CGCGCCAGTCCGACGTCATGATCGTGGCCGGCACACCACCAACAAGATGGCCCCAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tectgeagetgeagagaagateaagegggageggaggetgeagatetggtaeegeaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTGCAGCTGCAGAAGAACATCAAGCGGGAGCGGAGGCTGCAGATCTGGTACCGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agegeegeegeegeegeeggageetgtegeegteetgteeceageetgettgtgtee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttcgcaaggtctacgaccagatgccggagccgcgtacgtggtctccatggggagctgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgcccgtggacatctacatcccaggctgcccacctacggccgaggccctgctctacggca
                                                                                                                                                    ·;
                                                                                                                                   DB 9; Length 787;
                               MGC:14592)
                                                                                                                                                    1; Indels
                               for
                                                                                                                                 Score 700; DB
Pred. No. 0;
0; Mismatches
                             /product="Unknown (protein
/protein_id="AAH05954.1"
/db_xref="G1:13543603"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pDNR-LIB'
   /note="Vector:
                     /codon_start=1
                                                                                                                                 85.0%;
                                                                                                                                          Similarity 99.9
50; Conservative
            662
                                                                                                                                 Query Match
Best Local Simi
Matches 750;
                                                                                                                                                                                                                                               179 1
                                                                                             COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                      ۲.
                                                                                                                                                                                                          119
                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 779
                                                                                                                                                                      59
                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                    239
                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                         299
                                                                                                                                                                                                                                                                                                                                                               359
                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                   419
                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                        479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
            CDS
                                                                                             BASE
                                                                                                                                                                                       g
                                                                                                                                                                                                                           οp
                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                       õ
                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                               δ
```

RESULT AF060512

```
/product="My017 protein"
/product="My017 protein"
/db_xref="d1:1200197"
/db_xref="d1:1200197"
/translation="MavUsAPGLRGFRILGIRSSVGLAVQARGVHQSVATDGPSSTQP
ALPKARAVAFRPSRGEYVVAKLDDLVNWARRSSLAPMTFGLACCAVEMMHWAAPRYD
MDRGVYFRASRQSDVMIVAGTLIVKWAPALRKSPPRPDAGAALRGLHGELRQRRRL
LDFFLLGGEGLPRRAFLPTTAFALLYGILQLQRRIKRERRLQIWYRR"

2 267 c 239 g 128 t
                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                   Submitted (20 APR-1998) Institute of Genetics, School of Life Science, Fudan University, 220 Handan Rd., Shanghai 200433,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-JUL-1998
02-JAN-2001
complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gaggecaagatggeggtgetgteageteetggeetgegeggetteeggateettggtetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCTCCAGCGTGGGCCTGGCTGTGTGTGTGTGTCCATCAGAGCGTGCCACCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTCTGTGGCCCCATGACCTTCGGCCTGGCCTGCGCCGTGGAGATGCACATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cgetecagegtgggeceggetgtgeaggeacgaggtgtecateagagegtggecaeegat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agccgggggggggtatgtggtggccaagctggattgacctcgtcaactgggcccgccggagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCCGGGGGGGATATGTGGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tctctgtgggcccatgaccttcggcctggcctgcgccgtggagatgatgcacatggca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcaccccgctacgacatggaccgctttggcgtggtcttccgcgccagcccggcgccagtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACCCCGCTACGACATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCGCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Catarrhini; Hominidae;
                                                                                                                                      Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
PRI
mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
19, cosmid R34382,
                                                                                                                 Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Ve
Mammalla; Eutheria; Primates; Catarrhini;
1 (bases 1 to 754)
Mao,Y.M., Xie,Y., Huang,X.Y., Ying,K. and
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 366; DB 9;
Pred. No. 2e-171;
0; Mismatches 1
                       protein
                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="016d03"
bp mRNA
016d03 My017
                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="brain"
/dev_stage="fetus"
10. .654
                                                                                                                                                                                                                                                                                          Location/Qualifiers
1. .754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC005329 34875 bp
Homo sapiens chromosome
AC005329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
AC005329
LOCUS
DEFINITION
ACCESSION
```

ó

us-09-525-867-9.rge

```
complement(12031. 12535)
/note="DDS similarity to AAS94148 nn31e07.s1 NCI_CGAP_Gas1 /note="DDS similarity to AAS94148 nn31e07.s1 NCI_CGAP_Gas1 /note="DDS similarity to AAS94148 nn31e07.s1 NCI_CGAP_Gas1 /note="DOS similar to SW:NUTM_BOVIN P42026 NADH-UBIGUINONE OXIDOREDUCTASE 20 KD SUBNIT PRECURSOR ; Score: 960 Identity: 495/503 (98%)." join(<12485. 12547,14480. 14659,14784. 1474,16851. 16939, /note="NADH-UBIQUINONE OXIDOREDUCTASE 20 KD SUBUNIT /note="NADH-UBIQUINONE" CI-20KD; PSST SUBUNIT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation-"PPSSRGEYVVAKLDDLVNWARRSSLWPWTFGLACCAVEMMHMAAP
RYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGG
GYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /336. .737.
frame: 2, quality: excellent, score: 79.000"
7558. .7657
/rpt_family="(CGG)n"
/rpt_family="MER80"
/rpt_family="MER80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="NUKM_HUMAN, partial CDS"
/protein_id="AAC27669.1"
/db_xref="G1:3342734"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="(CATG)n"

/rpt_family="(CATG)n"

complement(13112, 13807)

/rpt_family="Aluy"

14197, 1430c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="tRNA-Asn-AAC"
7536, .7573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(6971. 7043)
/rpt_family="tRNA-phe-TTC"
7172. 7246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(10109, 10403)
/rpt_family="AluSx"
complement(10407, 10508)
/rpt_family="MLT18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="Alusx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="MLT1B"
/rpt_family="AluJb"
complement(4107, .420^\complement)
                                                                                                                                                                                     /rpt_family="MLT1B"
4670. .4967
                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="Ar_rich"
5572. .5864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement (5983. .6109)
/rpt_family="FLAM_C"
complement (6294. .6551)
/rpt_family="Alusg/x"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(8422...8696)
/rpt_family="AluJb"
8848...9142
                                                                     complement(4107, .4200)
/rpt_family="(GGGA)n"
complement(4398, .4553)
/rpt_family="MLT1B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rpt_family="(CA)"
/rpt_family="(CA)"
/rpt_family="(CA)"
//rpt_family="(CATG)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="Alusp"
9147. 9447
/rpt_family="Alusp"
complement(9856. 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="Alusx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_family="(CA)n"
|2873. 13004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_family="MER33"
complement(15093. .1
                                                                                                                                                                                                                                                                                 /rpt_family="Alusx"
5229. .5500
                                                                                                                                                                                                                                                                                                                                                'rpt_family="L1MC3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                repeat_region
                                                                           repeat_region
                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                       repeat_region
                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="DDS similarity to overlapping ESTS:
/note: 843 Identity:
/note: 841 Identity:
/note: 841 Identity:
/note: 842 Identity:
/note: 843 Identity:
/note
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission

Direct Submission

Submitted (28-JUL-1998) Joint Genome Institute, Lawrence Livermore National Laboratory, 7000 East Ave., Livermore, CA 94551, USA Map and sequence oriented from p telomere to centromere. Cosmid R34382 is adjacent to cosmid R28991 to the left, and overlaps BAC 38864 to the right from bases 33,973 to 34,873. Estimated sequence gap between R34382 and R28991 is <1 kb. Additional map and sequence information may be obtained at: Location/Qualifiers

i. 34875

//dromosme="Homo sapiens"
//clone="R34382"
//chromosome="19"
                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Homnalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 34875)
Lamerdin J.E., McCready, P.M., Skowronski, E., Adamson, A.W., Burkhart-Schultz, K., Gyrdon, E., Kyle, A., Ramirac, M., Stilwagen, S., Phan, H., Velasco, M., Dob.L., Kyle, M., Terry, A., Garnes, J., Danganan, L., Poundstone, P., Christensen, M., Georgescu, A., Avila, J., Liu, S., Attix, C., Andreise, T., Trankhelm, M., Amico-Keller, G., Krommiller, B., Arellano, A., Montgomery, M., Ow, D., Nolan, M., Trong, S., Kobayashi, A., Olsen, A.S. and Carrano, A. V. Sequence analysis of a 3.5 Mb contig in human 19p13.3 containing a serine protease gene cluster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Cosmid library constructed at LLNL from flow-sorted chromosomes from human-hamster hybrid 5HL2-B, which carries chromosome 19 as its only human chromosome." complement(1...62) //rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Anote="predicted exon, program: grail2exons_human_1.3, frame: 2, quality: good, score: 72.000" frame: 2, quality: good, score: 72.000" complement(1518..2040) frote="DS similarity to H98977 yx11e03.s1 Homo sapiens CDNA clone 261436 3'. Score: 967 Identity: 509/522 (978).-Additional EST matches: 22011.2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //map="19p13.3 between CDC34 and D195342"
//cell_line="5HL2-B"
//cell_line="1b="LL19NC03 R chromosome 19-specific cosmid"
//cell_lib="LL19NC03 R chromosome 19-specific cosmid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="AluJb"
complement(3800, 3831)
/rpt_family="(CCAA)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :201. .2486
/rpt_family="Alusx"
      AC005329.1 GI:3342732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 34875)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lamerdin, J. E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
```

29-NOV-1994

```
/db_xref="SWISS-PROT:P42026"
//db_xref="SWISS-PROT:P42026"
//translation="WAALAALRLLHPILAVRSGVGAALOVRGVHSSWAADSPSSTOPA
//translation="WAALAALRLLHPILAVRSGVGAALOVRGVHSSWAADSPSSTOPA
//translation="WAALAALRK"
RYDARARVPRASPROSDVAVATUTNKMAPALRK"
GYYHYSYSVVRGCDRIVPVDIYVPGCPPTABALLKGILQLQKKIKREKRLRIWYRR"
                                                                                                                                                                                               Dow tourus

Bukaryota: Metazoa: Chordata; Craniata: Vertebrata: Buteleostomi;

Bukaryota: Butheria: Cetartiodactyla: Ruminantia: Pecora: Bovoidea;

Bovidea: Bovinae: Bos

1 (bases 1 to 752)

1 (bases 1 to 752)

1 (bases 1 to 752)

NADH: ubiquinone oxidoreductase from bovine heart mitochondria. A fourth nuclear encoded subunit with a homologue encoded in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (11-MAR-1992) J.E. Walker, M.R.C.Lab of Molecular Biology, Hills Road, Cambridge CB2 2QH, UK Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/evidence=experimental
/product="PSST subunit of the NADH: ubiquinone oxidoreductase complex"
/db_xref="G1:599691"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="cI-PSST"
/product="PSST subunit of the NADH: ubiquinone
oxidoreductase complex"
                                                        BTPSSTSU 752 bp mRNA 29-NC B.taurus mRNA for PSST subunit of the NADH: ubiquinone oxidoreductase complex.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS AP002997 329709 bp DNA BCT 15-M
DEFINITION Mesorhizobium loti DNA, complete genome, section 4/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 752;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 38; DB 4; Len; Pred. No. 7e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  X65020
X65020.1 GI:11256
NADH-ubiquinone oxidoreductase subunit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 4.6%; Score 38; DB Best Local Similarity 100.0%; Pred. No. 7e-Matches 38; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134
                                                                                                                                                                                                                                                                                                                                                                        chloroplast genomes
FEBS Lett. 301 (3), 237-242 (1992)
92249573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /EC_number="1.6.99.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9913"
/germline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="adult"
/tissue_type="heart"
17. .667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               230 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="cI-PSST"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="cI-PSST"
                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 752)
Walker, J.E.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  243 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17. .667
/partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polyA_signal
polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                      COV
                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
AP002997/c
                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
               RESULT
BIPSSISU
                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΫ
                                                                                                                                                                                                                                                                                                                                                                 /gene-nost similarity to overlapping ESTS:
(21108. .20702) AA702319 zf88h09.sl Scores pineal gland
N3HPG Homo sapiens CDNA clone 384065 3' similar to
SW:GAMT_HUMAN OL4353 GUDANIDINOACETATE N'METHYLTRANSFERASE
; contains element LTR4 repeititive element; (425. 21); 99%
identity.-(21108. .20726) AA521337 aa68906.sl NCI_CGAP_GCB1
HOMO sapiens CDNA clone IMAGE:826138 3' similar to
TR.E184531 E184531 GUANIDINOACETATE N'METHYLTRANSFERASE.
; contains element MER22 repetitive element; (384. .1); 99%
identity.-(21104. .20712) F19653|HSPD04258 H.sapiens EST
sequence (011-x4-77) from skeletal muscle; Score: 782
Identity: 392/393 (99%)"
complement(20744. .25127)

Cproduct"H.sapiens mRNA for guanidinoacetate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MSAPSATPIFAPGENCSPAWGAAPAAYDAADTHLRILGKPVMER
WEPPYMHALAAAASKGGRVLEVGFGMAIAASKVQBAPIDEHWIIEONDGVFGRLRDW
ARRQTHKVIPLKGLMEDVAPTLEPDGHFDGILXDTYPLSEETWHTHQFNFIKNHAFRLL
KPGGVLTYCNLLTWGELMKSKYSDITIMFEETQVPALLEAGFRENIRTEVMALVPPA
DCRYYAFPQMITPLVTKG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(join(20068. .21108,22525. .22635,22737. .22804,
23333. .23196,23402. .23547,24905. .25085))
/gene="GAMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18997 casscreccaccracscccasscccrscrcracsscarccrscascrecassasa 19056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                680 tcaagcgggagcggagctgcagatctggtaccgcaggtagcgccgccgccgccgccgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             620 caggetgeceaectacggecgaggecetgetetacggeatectgcagetgcagaggaaga 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    740 ggagcetgtcgccgtcctgtccccagcctgcttgtgtccccgtgaggttgtcaataaacct 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 23.1%; Score 190; DB 9; Length 34875; Best Local Similarity 100.0%; Pred. No. 5.4e-84; Matches 190; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                              /note="guanidinoacetate N-methyltransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="GUANIDINOACETATE N-METHYLTRANSFERASE"
                                                                                 complement(17393. '-'
... 15755)
...Alusg"
5760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_famlly="Alusx"
complement[22043, 22351)
/rpt_famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="AluJo"
                                                                                                                              _family="MER53"
.ement./loin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="LINE2"
complement/21704)
                                                   complement(15760.7.15962)
/rpt_family="AluJo"
complement(15964.16290)
                                                                                                                                                                                  complement(18124...18279)
/rpt_family="(GGGA)n"
complement(19098...19132)
/rpt_family="(CGG)n"
                                                                                                                                                                                                                                                                                                                         complement(20702. .21108)
                                                                                                                                                                                                                                                                   complement(20702. .25100)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="GAMT_HUMAN"
/protein_id="AAC27668.1"
/db_xref="G1:3342733"
               complement (15460.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                       /gene="GAMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19177 GCCTCGGGC 19186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       800 gccctcgggc 809
               repeat_region
                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                   repeat_region
                                                                                                                                           repeat_region
                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                  misc_feature
```

MRNA

CDS

gene

ö

Gaps

ö

д ð

δ q δ g ò 15-MAY-2001

us-09-525-867-9.rge

```
/traislation="MSSLKSHFVSFVLRYSRKKAFSSPENLRRWIAAARKTEDHHPPA
SLHQRLHIQTRTVDGFPVYBIAPKAGEQRRILYLHGGAYVFBITPYHWLIADWADRL
GYGITYPIYPRIAPEHDFHAMMGMVGDYXRQMLDETBABDIYRGBGSAGGNMAVVLTWM
AREGIPLPARHVLISGCDMSLSNPKLFFABRNDFWLGIAGGLEAIRMYSAGIDRSD
WHISPIYGDVSVLPTTLLTGSHDLLTPDNLFRQARADAGVEUFEGMFHAWPL
IDMPEARRARQHIYAFLGGRESPVRQDGKTRFQARSAGAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protesin_id="Bad48667.1"
/db_xref="G1:14022057"
/db_xref="G1:14022057"
/db_xref="G1:14022057"
/dranslation="MGIKHAACKTSQIKRRNVPGPAPKENEMSILSSLGRIATEFSAA
/ARRQTERISLPIELQKDIGWPEASDTKTGTRNGVGSWAGAK"
6136. 7137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
/product="probable transcriptional regulator"
/product="probable transcriptional regulator"
/protein_id="BAB48668.1"
/db_xref="G1:\4022058"
/translation="MNAIKHPIKRSFVFFLVPDFTMIAFATALDPLRSANRMLGYEAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RWELLSIDGKPVRASNOVECAVVTSLEEERKKMAGPDRPNMAIVCSGVNVERYQNKSA FAMLREETNRGVAVGGLCTGAHILAAGLLSNKROA HWBNLPGFSBAFPKANVFADL FEDDANLYLOAGGTAALDMMLKIGADFDESLVNRYCEQVLTDRVRSPTDRGNLPLRA RLGVONSKVLTITEMAGNLSEPLSLIEIADHVDLSRRQIERLFRTBMGRSPARYLE IRLDRARHLLIQSSMPVVEVAVACGFVSAHFSKCYRELYARSPQQERVDRKQLLAA" (COMPLEMEN (7153. . 7956)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="ATP-Dinding protein of ABC transporter"
/protein_id="BAB48669.1"
/db_xref="G1:14022059"
/db_xref="G1:14022059"
Laraslation="MEPGYKLLIEGVSRTFAGYRGGLPVKALMPIDLAVAANDFITI
LGPGGCGRSTLLRIYAGLBARSEGRYLLDDKAVTRPCPDRGMYFQSYTLFPMLTVSEN
IAFGLRERGMAPKERDDIVASYVDLVGLKGFENHWPKQLSGGMQQRTAIARALANDPE
    complement(4062..4961)
/gene="mill248"
complement(4062..4961)
/gene="mill248"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                           /product="esterase"
/protein_id="BAB48665.1"
/db_xref="G1:14022055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(7153. .7956)
/gene="m111253"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="unknown protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6136, .7137
/gene="mlr1251"
/codon_start=1
                                                                                                            3087. .4040
/gene="mlr1247"
3087. .4040
/gene="mlr1247"
                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl__table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5113. .5379
/gene="msr1249"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5113. .5379
/gene="msr1249"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="mlr1251"
6136. .7137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="ml11253'
                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codo_start=1
/transl_table=11
/product="probable electron transfer protein"
/product="probable electron transfer protein"
/product="probable electron transfer protein"
/protein_id="Bab48663:1"
/db_xref="fd1:14022053"
/translation="MNSPANITDPLVLPMPSGKRGRPPVGTPVLDAARQLGVYVESVC
GGRATCGRQIEVGENRAKHKTVSSNDHISPRGRERYERYERYERTSGSAVI
IGDLYIDVPQOTVINAQTIRKDADTRYLARDTAAIHKDADSDIARVIALMPGLKKI
ALMKDWGFRYTRAMHLYSLLSGRYAASSGTSRPQIRFEEDLMSRVSYYMMNDGFRGR
YGLACDIGSTTTAMHLYSLLSGRYAASSGTSRPQIRFEEDLMSRVSYYMMNDGFRGR
TVANREAISSLVDKVVARGGNVGRNDILDSVRYGNPIMHHLFLGIDPTELGGAPFALAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /protein_id="BhB48662.1"
/db_xref="G1:14022052"
/translation="MSRKGLSIPFNGSFHYWADCLMYQRPIMSDLLLSSIFTAFTMVR
LLKGPWLRNPQYLATGILGAVVAMLLLNGLWPAYDDDFVIGGVTGIFGSWAGMALFDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGAVRIKASDIGLKLNOGARLYMLPCIAGHVGADAAAVTLSEGPHRODEMALIVDVGT
BLAETVLGNRRRVVAASSPTGPAFEGARISGGRAAPGAIERVRIDPDTLEPKYRVIGS
ELMSDEPGFLDSVQATGVIGGGGIIEIVAEMYLAGIISEDVVDGSLAARSPRYTA
NGRFPSYVLKEGEPKTIITOTDVRAIQLAKAALYAGTIKLMRGNTEHVDRIFEAGAF
GSFIDPKYAMVLGLIPDCDLDKVSAVGAAGAARAALYAGTIKENGYRREIEETVSQIEKIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TALEPKFQEHFVYAMALPNKVDPFPKLSAAVKLPPRKTVSEDGIAGDATPRRSREGH
                                                                                                                                                                    Kaneko,T., Nakamura,Y., Sato,S., Asamizu,E., Kato,T., Sasamoto,S., Natanabe,A., Idesawa,K., Ishikawa,A., Kawashima,K., Kimura,T., Natshida,Y., Kiyokawa,C., Rohara,M., Matsumoto,M., Matsuno,A., Mochizuki,Y., Nakayama,S., Nakazaki,N., Shimpo,S., Sugimoto,M., Takeuchi,C., Yamada,M. and Tabata,S.
                                                                                                                                                                                                                                                                                                                                                                           Bacteria, Proteobacteria, alpha subdivision, Rhizobiaceae group;
Phyllobacteriaceae; Mesorhizobium.
                                                                Mesorhizobium loti (strain:MAFF303099) DNA Mesorhizobium loti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="mlr1246"
/note="unknown protein"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(79, .402)
/gene="ml11244"
/note="unknown protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                               (2000)
                                                                                                                                                                                                                                                                                                       bacterium Mesorhizobium loti
DNA Res. 7 (6), 331-338 (200
21082930
2 (bases 1 to 329709)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2529. .2852
/gene="mlr1246"
2529. .2852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            411. .2480
/gene="mlr1245"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      411. .2480
/gene="mlr1245"
  AP002997 BA000012
AP002997.2 GI:14022051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AARRSRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGIA"
                                                                                                                                                        (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                       ORGANISM
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                 MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                               JOURNA
                                                                                                                                                                                                                                                                                     TITLE
                                                                   SOURCE
```

```
Direct Submission
Submitted (29-JUN-2000) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 226013)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Consensus quality: 209118 bases at least 040
Consensus quality: 215883 bases at least 030
Consensus quality: 217616 bases at least 020
Estimated insert size: 216000; agarose-fp estimation
Coulity coverage: 9.65 in 020 bases; agarose-fp estimation
Quality coverage: 9.1 in 020 bases; sum-of-contigs estimation
* NOTE: This is a 'working draft' sequence. It currently
* consists of 20 contigs. The true order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig of 1157 bp in length
gap of unknown length
contig of 1051 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig of 14839 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 19485 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 3642 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 2608 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
of 1924 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 5780 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 1317
unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                             Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                         Center clone name: RPCI-23_116M1
                                                                                                                                                                                                                                     -----Genome Center
Center: Joint Genome Institute
                                                                                                                                                                                                                                                                                                                                                                                1781705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
                                                                                                                    2 (bases 1 to 226013)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                Center Project Name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17640:
17740:
19342:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21466:
27246:
27346:
30988:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2408:
3408:
3508:
4765:
4865:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31088:
                                                                          Sequencing of Mouse
                                                                                                                                                                                                                                                                                                                                                          Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21366:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13684
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Summary Statistics
                                                                                                                                                                                                                                                                                      Center Code: JGI
                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                      /translation="MKMRPLHPVSPGLRTGLGISFFVLFIAFWAWITLGGHVNRIFLA
DPLSMLRDGGRLLVEDRFWLDILITWRVFGGFVLASVVAVDIGIAMGAWKPYEAFLE
PRYSFARYLPASAFIPLLILAGGGELEKLLVIFVGSVFQIILIVAVKVGSTRRDLVE
PAYTLGSTNNGIVKRYIMPANAPELAETLRIVLGWAWTVVIVAELIGSSSGIGYMIN
SQSRLATGQIIFGIIVIGLIGLLSDFAFKAFNRWLFPWSLA"
(0001) Ement (1802. 9752)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="Bab48671.1"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:14022061"
/db_xref="G1:140261"
/db_xref="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PDAAAQAFLAGQNDAAVTYEPFISAVRDKADQGHILATTLDYPWVLDTVGCTPEFLKA
NPDAAKALADSYFEALDLIKKDPQKSYEIMGADVKQSAKEFEDSAKYLKWADKADNQQ
FFTKEFQDFSKTAGALLLQMGLIKEAPDVATLADTSAVAN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GFEPGFCLFKQVVFAYPRGMSALSRARHLLSGCAALALMLMFMPGSRADEPVDVELVL
AVDVSLSMSADELETQRHGYRAALTHDNVLQATADGAHGKTRAYTVERKAGTYMQRVIV
PWTVIANRADAERVVAQLSAQPPNSARRTSISGALEFGSDLFAESGYEGTKRVIDISG
DGPNXQGAPVNLTRGSVVRGIVINGLPLMFRGGLSGAYDVNDLDRYYSDCVTGGPGA
FMIPVNDWTQFPEAIRRKLVLELAGPASPQWAAEEADHPPVVLTQDKPAADCQIGEKM
ILLLDEPFGALDNQTRGLMQELLLGIWERRKXTVLFVTHDIEEAIFWASRVIVMTARP
GSIKSDVAIDLPHPRHYTLKTSPEFSALKARLTEDIRVEAMRTAQAQPA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="BA348672.1"
/db_xref="GI:14022062"
/translation="MSSISARPIRSKSPVSATSRFWTRRTSSRAADRSGGPRDLLQKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC073680 226013 bp DNA HTG 29-JUN-2000
Mus musculus clone RP23-116M1, WORKING DRAFT SEQUENCE, 20 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                   /product="permease protein of ABC transporter"
/protein_id="BAB48670.1"
/db_xref="GI:14022060"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 329709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.6%; Score 38; DB 1; D. 100.0%; Pred. No. 2.2e-08; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                        complement(8802. .9752)
/gene="m111256"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(10906. 13467)
/gene="ml11258"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(10906, .13467)
/gene="ml11258"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(9963. .11000)
/gene="ml11257"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(,9963. .11000)
/gene="ml11257"
                                                                   /gene="ml11254"
complement(7941. .8720)
/gene="ml11254"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HTG; HTGS_PHASE1; HTGS_DRAFT.
house mouse.
                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                    /gene="ml11256"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                      /codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC073680
AC073680.1 GI:8810297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
AC073680/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                 dene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
```

```
arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11427 115278: cont.19 of 712 bp in length 11527 12238: cont.19 of 712 bp in length 12239 12339: gap of 100 bp 12339 13050: gap of 100 bp 13051 13150: gap of 100 bp 13051 13150: gap of 100 bp 13069 13069: cont.19 of 718 bp in length 13069 13069: cont.19 of 718 bp in length 14700 14799: gap of 100 bp 15513 15612: gap of 100 bp 15513 15612: gap of 100 bp 15513 15612: gap of 100 bp 16337 16436: gap of 100 bp 16337 16436: gap of 100 bp 17381 17281: gap of 100 bp 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 17381 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ap of 100 bp in length 
                                                                                                                                                                                                                                                                        100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 100 bp contig of 724 bp in length p of 100 bp contig of 733 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23: gap of 100 bp 24543: contig of 720 bp in length 43: gap of 100 bp in length 25430: contig of 787 bp in length
                                                                                                                                                                                                                                           contig of 717 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig of 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10

7728: gap of 72

20442: cr
                                                                                                                                                                                                                                                                 100
100
100; gap of
2358: cc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42: gap of 10
21248: contig of 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              con. gap of 23723:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18800: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30: gap of
26251: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18900: gap of
19628: conf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21348: gap of 22075: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22175: gap of
22898: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23823: gap of 24543: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10693: gap of
11426: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26351: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27171: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3: gap of
9769: cor
9: gap of
10593: cor
                                                                                                                                                                                                                                                                           718 817: gap of
818 1550: cor
1551 1650: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9: gap of
4009: cor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8933: cor
                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5: gap (
                                                                                                                                                                                                                                                                                                                                                                                                   2458; gap (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5635;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . gap
7286:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9ap 8118:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4816:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25530:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24643:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3279:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4109:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5735:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6556:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20542:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8218:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4916:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7386:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9033:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9869:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19728
                                                                                                                                                                                                               be preserved.
                                                                                                                                                                                                                                                                                                                                                                              1651
2359
2459
3180
4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10594
10694
11427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4110
4817
4917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55636
6457
6457
6557
7387
7387
7387
7387
9034
9034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23824
24544
24644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26252
26352
27072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dupublished

Unpublished

Dib. Onpublished

Selvania. Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barnan N., Beckerly, K., Beder, F., Boukhgalter, B., Brown, A., Burkett, G., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Domino, M., Doyle, M., Fenestor, J., FitzHugh, W., Forrest, C., Gage, D., Galagan, J., Ferreita, P., FitzHugh, W., Forrest, C., Gage, D., Galagan, J., Howland, J.C., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., Landers, T., Lehoczky, J., Levine, R., Liu, G., Locke, K., Macdonald, P., Marquis, N., McGurk, A., McGurk, A., McRernan, K., McMand, C., Liu, G., Locke, K., McMand, C., Liu, G., Locke, K., McMand, D., Norman, C.H., O'Connor, T., Tesfaye, S., Theodore, J., Tirrell, A., Vassiliev, H., Viel, R., Vo, A., Wu, X., Wyman, D., Ye, W. J., L., E., Tesfaye, M., Wyman, D., Ye, W. J., Wyman, D., Yold, Liss, Sequence version replaced gi:gl46492.

All repeats were identified using repeatmasker:

Smit, A.F. A. Green, P. (1996-1997)

http://ftp.genome.washington.edu/RM/Repeatmasker:
                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases 1 to 6808)
Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome, clone RP11-76H7
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC022708 68808 bp DNA HTG 24-MAR-2001
Homo sapiens clone RP11-76H7, LOW-PASS SEQUENCE SAMPLING
AC022708
                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                       DB 2; Length 226013; 7.3e-07;
1375 226013: contig of 155639 bp in length.
Loation/Qualifiers
1. 226013
/ Organism="Mus musculus"
/ Ab_xref="taxon:10090"
/ Clone="Rp2-116M1"
/ Clone="Rp2-116M1"
/ Clone="Rp2-116M1"
/ Clone="Rp2-116M1"
/ Clone=116="RpC1 mouse BAC library 23"
3 a 60547 c 59323 g 50104 t 1941 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOTE: This record contains 84 individual sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: sequence_submissions@genome.wi.mit.edu
------- Project Information
Center project name: L5354
                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DD 182833 CAGAGGTTGTCTGAAGGCCGAGGCCAAGATGGCGG 182799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site: http://www-seg.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51 cagaggttgtctgaaggccgaggccaagatggcgg 85
                                                                                                                                                                                                                                                                                                                                                                       Query Match
4.2%; Score 35; DB
Best Local Similarity 100.0%; Pred. No. 7.3
Matches 35; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center clone name: 76_H_7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC022708.3 GI:13443223
HTG; HTGS_PHASE0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
          70375
                                                                                                                                                                                                                                        54098 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
AC022708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
```

100 bp in length of 719 bp in length of 719 bp in length 100 bp in length 100 bp in length of 732 bp in length of 715 bp in length of 715 bp in length

00 bp 736 bp in length

length in

100 bp 720 bp

100 bp 725 bp

00 bp 707 bp in length

δž

us-09-525-867-9.rge

```
74 36223: 90.

24 36961: contly.

362 37061: gap of 100 ...

77062 337774: contig of 713 bp in ...

7775 38613: contig of 739 bp in length

37075 38713: gap of 100 bp

7717 bp in length

7717 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          718; 9ar

3529; gap of

44251; contig of 722 bp in .c...

44251; gap of 100 bp

45188; contig of 737 bp in length

945188; gap of 100 bp

100 bp

100 bp

100 bp

100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 40361: y-, contry 100 x; do y 40956: contry 100 x; dap of 41081: gap of 100 bp 11781: contig of 725 bp in length 782 41881: gap of 100 bp 72618: contig of 771 bp in length 771 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                801 45977; y-, 100 cont.y 100 con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 49342: con...
3 48442: gap of 100 me 49692: contig of 627 bp in Leuse.
70 49169: gap of 100 bp 170 49930: contig of 761 bp in length 170 49930: contig of 761 bp in length 170 bp 170 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       i contry

jap of

1: control of 717 bp in 100 pp

gap of 100 bp

56: control of 55 bp in length

-f 725 bp in length
27914: contig of 743 bp in length
15 28014: gap of
100 bp
28 2852: contig of 738 bp in length
53 2852: gap of
53 29595: contig of 743 bp in length
54 29595: contig of 743 bp in length
56 29695: gap of
100 bp
12 3041: contig of 716 bp in length
12 3120: contig of 709 bp in length
21 3120: gap of
100 bp
21 3320: contig of 725 bp in length
46 3244: gap of
100 bp
47 32844: contig of 699 bp in length
48 32944: contig of 699 bp in length
48 32944: gap of
100 bp
48 32844: contig of 699 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ap of 100 pp 10 1.0 cf 216 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53 51662: gap of 50 100 bp 100 sp 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cont., loc., contig of 713 bp in ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tap of 200 bp in length gap of 100 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  56508: contig of 723 bp
56608: gap of 100 bp
57328: contig of 720 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50843: gap of 1/
51562: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66: gap of 34482: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54030 54129: gap of 1
54130 54868: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8614 38713: gap of 1
8714 39444: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Julc
Jy6: gap of
J6123: con+'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  con.
40956: 40956: 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6124 36223: gap of 6224 36961: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7517 47616: gap of
7517 48342: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2619 42718: gap of
2719 43429: con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8343 48442: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35296:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54130 5486
54869 54968:
54969 5568:
55686 55785:
55509 56608:
56609 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34582:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45188:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34583
35297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36962
37062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51663
52388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5397
```

```
Discrete to 172631)

Biren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M., Barran, M., Beckerly, R., Boqualavkiy, L., Boukhgalter, B., Brown, A., Casatle, A., Colangelo, M., Collins, S., Collymore, A., Cosatle, A., Colangelo, M., Collins, S., Collymore, A., Cooke, P., Dearallano, K., Dewar, K., Domino, M., Donelan, L., Doyle, M., Ferrelra, P., Fitzhugh, W., Forrest, C., Funke, S., Gage, D., Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Lehocxy, J., Lauc, C., Locke, K., Macdonald, P., Marquis, N., McDaughlin, J., Marquis, N., McDaughlin, J., Marquis, N., McDaughlin, J., Marquis, N., Peterson, K., Pollarav, M., Norman, C. H., O'Connor, T., O'Donnell, P., Peterson, K., Pollarav, V., Riley, R., Roy, A., Santos, R., Severy, P., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tasfaye, S., Tirrell, A., Vassiliev, H., Vo, A., Wheeler, J., Wu, X., Wyman, D., Ye, W., J., Zimmer, A. and Zody, M. Direct Submission

Submitted (30-ocr-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Mar 2, 2000 this sequence version replaced gi:6514022.

All repeats were identified using RepeatMasker:

Smit, A.F. A. & Green, P. (1966-1997)

http://ftp.genome.washington.edu/RM/Repeatmasker.html
                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Eukaryota; Metazoa: Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                              3 03-MAR-2000
map 4, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center clone name: 38_D_12

Center clone name: 38_D_12

Sequencing vector: M13, M77815

Sequencing vector: M13, M77815

Assembly program: Phrap; version 0.960731

Consensus quality: 162651 bases at least Q40

Consensus quality: 11998 bases at least Q30

Consensus quality: 171998 bases at least Q20

Insert size: 215000; agarose-fp

Insert size: 17531; sum-of-contigs

Quality coverage: 5.7 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               * NOTE: This is a 'working draft' sequence. It currently * consists of 2 contigs. Gaps between the contigs
                                                                                                                                                                  ö
                                                                                                              Length 68808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                  Indels
57329 57428: gap of 100 bp
57429 58166: contig of 738 bp in length
58167 58266: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 172631)
Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens chromosome 4, clone RP11-38D12
                                                             Homo sapiens chromosome 4 clone RP11-38D12 SEQUENCE, 2 ordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                       DD 33922 CCTGCCCTCGGGCAAAAAAAAAAAAAA 33949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center project name: L2008
                                                                                                                                                                                                                       797 cctgccctcgggcaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC012566
AC012566.3 GI:7143435
HTG; HTGS_PHASE2; HTGS_DRAFT.
                                                                                                                                     100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center code: WIBR
                                                                                                              3.4%;
                                                                                                                                                                  Conservative
                                                                                                                                        t Similarity
28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                           Query Match
                                                                                                                                        Best_Local
Matches 2
                                                                                                                                                                                                                                                                                                                                                       RESULT 9
AC012566/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                          ã
```

```
Direct Submission
Submitted (27-3AV-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Sep 9, 2000 this sequence version replaced gi:6850453.
All repeats were identified using RepeatMasker:
All repeats were identified using RepeatMasker:
http://ftp.genome.washington.edu/RW/RepeatMasker.html
center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. It currently consists of 19 contigs. The true order of the places is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                 Center clone name: 24_614

Center clone name: 24_614

Sequencing vector: M13; M79815; 100% of reads Chemistry: Dye-terminator B1g Dye; 100% of reads Assembly program: Phrap; version 0.960731

Consensus quality: 197097 bases at least Q40

Consensus quality: 197525 bases at least Q20

Insert size: 196000; agarose-fp

Insert size: 196691; sum-of-contigs

Quality coverage: 4.4 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                    Center code: WIBR
Web site: http://www.seq.wi.mit.edu
Contact: sequence_submissions@enome.wi.mit.edu
Center project Information
Center project name: L4451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50997 52300; contig of 1304 bp in length 52301 52400 gap of 100 bp 52301 54995; contig of 2595 bp in length 54996 55095; gap of 100 bp 55096 5703; contig of 2598 bp in length 5703; gap of 100 bp 100 bp 57704 62215; contig of 4512 bp in length 62216 62315; gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22 197646: contig of 1902b bp in length 47 197746: gap of 100 bp 17 197891: contig of 745 bp in length. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 bp
of 7183 bp in length
100 bp
of 8442 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23961: contig of 23961 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105887 105986: gap of 100 bp 10587 10514: contig of 10328 bp in length 116314: gap of 100 bp 100 bp 116315 116414: gap of 109 bp in length 116415 127405: contig of 1099 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7505: gap of 100 bp
140893: contig of 13388 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ap of 100 bp
contig of 18382 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 up of 100 bp contig of 19046 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24062 50896: contry ... 100 bp 50897 50996: gap of 100 bp 50897 52300: contig of 1304 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15: gap of 100 bp 66599: contig of 4284 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100 bp
5352 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     p of 100 bp contig of 7893 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      969: gap of 100 bp
105886: contig of 9917 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23962 24061: gap of 100 bp 24062 50896: contig of 26835 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 72151: gap of 100
2 79334: contig of 71
5 79434: gap of 100
15 87876: contig of 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cont : gap of 72051:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     159376 159475; gap of 159476 178521; cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   178522 178621: gap of
178622 197646: cont.
197647 197746: gap of
197747 198491: cont.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95869:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27506 127505:
27506 14089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             :66999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95870 95969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87877 87976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87977
  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lacases 1 to 194941)

Birton, B. Lintcon, L. Musbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Lintcon, J., Barna, N., Beckerly, R., Beda, F., Anderson, S., Baldwin, J., Barna, N., Beckerly, R., Beda, F., Bogulalavkiy, L., Boukhgalter, B., Brown, A., Burkett, G., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Domino, M., Doyle, M., Fenestor, J., Ferreira, P., Fitziludh, W., Fortsett, G., Gage, D., Galagan, J., Ferreira, P., Fitziludh, W., Fortsett, G., Gage, D., Galagan, J., Landra, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Landagan, J., Levines, T., Lau, G., Locke, K., Macdonald, P., Marguis, N., Merbwan, P., McGurk, A., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Morrow, J., Naylor, J., Norman, C. H., O'connor, T., O'connol, P., Olivar, T. M., Peterson, K., Pisani, C., Pollara, V., Raymond, C., Riley, R., Rothman, D., Roy, A., Santos, R., Severy, P., Spencer, B., Stange-Thomann, N., Tirrell, A., Vassiliev, H., Viel, R., Wu, X., Wyman, D., Ye, W.J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC022249 198491 bp DNA HTG 09-SEP-2000 Homo sapiens clone RPI1-24G14, WORKING DRAFT SEQUENCE, 19 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammallai; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 196491)

Birren,B., Linton,L., Nusbaum,C. and Lander,E.

Fiomo sapiens, clone RP11-24G14

Uppublished

2 (bases 1 to 199491)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                        is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.
  are represented as runs of N. The order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 172631;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100 others
                                                                                                                                                                                                 78381 78480: gap of 78481 172631: contig of 94151 bp in length. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                          /clone="RP11-38D12"
/clone_lib="RPCI-11 Human Male BAC"
1. 78380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vector_side:right"
. 30937 c 31576 g 57244 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 3.4%; Score 28; DB Best Local Similarity 100.0%; Pred. No. 0.( Matches 28; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                            1. .172631
Corganism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="4"
/map="4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91239 CCTGCCCTCGGGCAAAAAAAAAAAAAAA 91212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         797 cctgccctcgggcaaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC022249
AC022249.3 GI:10045487
HTG: HTGS_PHASE1; HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone_end: T7
                                                                                                                                                                                                                                                                                      .172631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78481.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52774 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
AC022249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                          FEATURES
```

g δ

.. o

```
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata: Buteleostomi; Mammalia: Butherlia; Primates; Catarrhini; Hominidae; Homo.

1 (Dases 1 to 789)

Xu,J., Dillon,D.C., Mitcham,J.L., Harlocker,S.L., Jiang,Y., Sked,S.G., Kalos,M.D., Retter,M.W., Stolk,J.A., Day,C.H., Compositions and Mang,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1038)
Del-Favero, J. and Van Broeckhoven, C.
Novel fragmentation vectors and uses thereof
Compositions and methods for therapy and diagnosis of prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                              31-MAY-2001
                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 3.3%; Score 27; DB 6; Length 789; Best Local Similarity 100.0%; Pred. No. 0.021; Matches 27; Conservative 0; Mismatches 0; Indels
                                                                                                                                                          66 others
                                                                                                                                                                                                                      Length 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66 others
                                                                                                                                                                                                                   Query Match 3.3%; Score 27; DB 6; Length 786
Best Local Similarity 100.0%; Pred. No. 0.021;
Matches 27; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                          ų
                                                                                                                                                          195 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent: WO 0134802-A 32 17-MAY-2001;
CORIXA CORPORATION (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                              AX140542 789 bp DNA
Sequence 32 from Patent WO0134802.
AX140542
AX140542.1 GI:14280660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
1240 c 159 g 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AX008551 1038 bp DNA
Sequence 9 from Patent WO9966059.
AX00851 GI:9996101
                                                                                                                                                                                                                                                                                  722 geogeogeogeogeoggageotgt 748
                                                                                                                                                                                                                                                                                                     151 GCCGCCGCCGCCGCCGGAGCCTGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            722 gccgccgccgccgccgcggagcctgt 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151 GCGCCGCCGCCGCCGCGGAGCCTGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
                  cancer
                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
AX008551
LOCUS
DEFINITION
                                                                              sonrce
                                                                                                                                                                                                                                                                                                                                                              RESULT 12
AX140542/c
                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                               PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 789)
Xu,J., Skeiky,Y.A., Reed,S.G. and Cheever,M.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.4%; Score 28; DB 2; Length 198491;
100.0%; Pred. No. 0.0023;
Live 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1825 others
                              /clone="RP11.24G14"
/clone_lib="RPCI-11 Human Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vector_side:right"
vector_side:right"
vector_side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   127506. 140893

/note="assembly_fragment"

/note="assembly_fragment"

159476. 178521

/note="assembly_fragment"

178622. 197646

/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                62316. .66599 "-
/note="assembly_fragment"
66700. .72051 /note="assembly_fragment"
72152. .79334 /note="assembly_fragment"
79435. .87876
                                                                                                                     vector_side:left"
24062. 50896
/note="assembly_fragment"
50897. 52300
/note="assembly_fragment"
                                                                                                                                                                                                  52401. 54995 /
/note="assembly_fragment"
55096. 57603
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX106251 789 bp DNA
Sequence 32 from Patent W00125272.
AX106251 GI:13921937
                                                                                                                                                                                                                                                                                                                                                                                                                                 /9//. .>oooc.
note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05987. .116314
note="assembly_fragment"
16415. .127405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="assembly_fragment"
27506. .140893
                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_fragment"
7977. 95860
                                                                                                                                                                                                                                                                                                                                                                                                                                                     5970 105886 note="assembly_fragment"
                                                                                                                                                                                                                                                                7704. 62215 -
note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .97747: .198491
/note="assembly_fragment
                                                                                            'note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ouery Match
Best Local Similarity 100.
Matches 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                             misc_feature
                                                                                                                                         misc_feature
                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                    misc_feature
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
AX106251/C
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
```

ô

ô

Gaps

.; O

```
Y IVNNGEHKNOVLERALIATILKEVLEGLDYLHRNGOIHRDLKAGNILLGEDGSVQIA
DEGVSAFLATGGDVTRNKVRKTFVGTPCWMAPEVIEGVRGYDFKADMWSFGITAIELA
TGAAPLKKKFOKARNREYLIKELLTSTPDTAGNEKKYGKSFRKLLSLCLCKDPSKR
PYAABELKKKFOKARNREYLIKELLTSTPDTAGNAKKYRRVPGSSGHLHKTEDGDWE
WSDDRWDEKSGEGKAAASOBEKSFRYKEENPETSYNAGGIPPGJQSLSYHDSOGQPNAN
BDYREGPCAVNLVLRLRNSRKELNDIRFEFTPGRDTADGVSGELFSAGLVDGHDVVIV
AANLOKIVDDPKALKTLTFKLASGCDGAEIPPGVKLIGFAQLSVS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="ps/TK"
/codon_start=1
/product="pancreatic serine threonine kinase"
/product="pancreatic serine threonine kinase"
/product="pancreatic serine threonine kinase"
/db_xref="G1:3219365"
/db_xref=
                                                                                                                                                                                                                                                                                                                                                                        AF068261 1879 bp mRNA ROD 13-JUN-1998
Rattus norvegicus pancreatic serine threonine kinase mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 1879)
Miao,N., Fung,B., Sanchez,R., Lydon,J., Karavanova,I. and Pang,K.
PS/TK, A novel serine/threonine kinase expressed during pancreatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
2 (bases 1 to 1879)
Mido.N. and Pung.K.
Direct Submission
Submitted (26-MAY-1998) Ontogeny, Inc., 45 Moulton Street,
Cambridge, MA 02138, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1879;
       Length 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Indels
                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 3.3%; Score 27; DB 10; Similarity 100.0%; Pred. No. 0.018; 27; Conservative 0; Mismatches 0;
   Query Match 3.3%; Score 27; DB 9; Best Local Similarity 100.0%; Pred. No. 0.02; Matches 27; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /crganism="Rattus norvegious"
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/tissue_type="pancreas"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search completed: February 12, 2002, 19:09:51
Job time: 5286 sec
                                                                                                                                    721 egeegeegeegeegeegeetg 747
                                                                                                                                                                           302 CGCCGCCGCCGCCGCCGCAACCCTG 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 egeogeogeogeogeogagectg 747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 CGCCGCCGCCGCCGCCGCGGAGCCTG 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        545 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF068261
AF068261,1 GI:3219364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1, .1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 development
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Norway rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                           RESULT 15
AF068261/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Primates: Catarrhini; Hominidae; Homo. (bases 1 to 1038) Olofsson, A., Ichijo, H., Moren, A., ten Dijke, P., Miyazono, K. and Heldin, C. H. Efficient association of an amino-terminally extended form of human latent transforming growth factor-beta binding protein with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Procedin_id="AaA96327.1"

/db_xref="G1:1196439"

/db_xref="G1:1196439"

Licanslat.con="Magawirwglilwagilassahgrirrityvyhpgpglaagalp
Licanslat.con="Magawirwglilwagilassahgrirrityryyhpgpglaagalp
Licanslat.con="Wagawirwglaga"
Licanslat.con="Wagawirwglaga"
Licanslat.con="Wagawirwglaga"
PPPPPEPARPANPGGQLHPNPGGHPAAPFTKQGRQVYRSKYPQETQSGGGSRLQVHQ
RQQDGGWYNCGRCCHGWSRAPSORGRGRA
CETTAAQDTSSPVFGGGSPGAASSWGPPEQAAKHTSSKRADTLPRYSPVAQWITLILK
KPSVGLPQOTHSQVTPLSSQSVVIHHGQTQEYVLKPKYFPAQKGISGEQSTEGSFPLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HUMLTBP 1038 bp DNA PRI 08-APR-1996
Homo sapiens (clone H 4.4) latent transforming growth factor-beta
binding protein (LTBP-1L) gene, partial cds.
Patent: WO 9966059-A 9 23-DEC-1999;
BROECHHOVEN CHRISTINE VAN (BE); DEL FAVERO JURGEN (BE); VLAAMS
INTERUNIV INST BIOTECH (BE)
Location/Oualifiers
1. 1038
//organism="hamon sapiens"
//db_xref="taxon:9606"
1. 1038
//oreamism="taxon:9606"
| 1. 1038
//oreamism="taxon:partial cds (GenBank L46925)"
| 191 a 351 c 323 g 173 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148925
148225.1 GI:1196438
EGF-like repeats; LTBP-1L gene; extracellular matrix binding;
latent transforming growth factor-beta binding protein.
Homo sapiens (clone: H 4.4) DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/product="latent transforming growth factor-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 3.3%; Score 27; DB 6; Length 1038; Best Local Similarity 100.0%; Pred. No. 0.02; Matches 27; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          extracellular matrīx
J. Biol. Chem. 270 (52), 31294-31297 (1995)
96125117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_cref="teaxon:9606"
/clone="H 4 . 4"
/cell_line="HEL"
/cell_type="exythroleukemia"
/tissue_type="blood"
/note="(vector lambda gtll)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .>1038
/gene="LTBP-1L"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="LTBP-1L"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YVQDQVAAPFQL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1, .1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        191
                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
HUMLTBP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                β
```

÷

Gaps

ô

2819583.3 602457879

602150934 601150009 602458936 ba05e08.x ba07d02.x 602998909 602651438 601484646 RC5-NN116

602300616 601592903

Perfect score:

Run on:

Sequence:

Scoring table:

Word size

Searched:

Database :

```
In Interest to 100 miles of Health, Mammalian Gene Collection (MGC)

In Nutional Institutes of Health, Mammalian Gene Collection (MGC)

Londbulished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-rémail.nih.gov

Tissue Procurement: DCTD/DTP/Gazdar

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov

column: 22

High quality sequence stop: 691.

High quality sequence stop: 691.

Long found (1.655)

//A. v.nef=Health (1.655)
                                                                                                                                                                                                                                                                                                                                                                                                                                                AL580649 AL580649
AL524830 AL524830
BF981767 602305432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukarmalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 695)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BG488658 695 bp mRNA EST 27-MAR-2001
602534588F1 NIH_MGC_18 Homo sapiens cDNA clone IMAGE:4662381 5'
                           BG491103
BE794266
BG012666
BG012666
BE795373
BE116730
BM116730
BM12458125
BM12458125
BE711108
BE71108
                                                                                                                                                                                                                                                                                                              AW249421
BG683330
AJ346557
                                                                                                                                                                                                                                                                                                                                                         BE879384 (AA315377 I
                                                                                                                                                                                                                                                                                                                                                                                                     BE537419
BF958045
BF980462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
/clone="IMAGE:4662381"
/clone=lib="NIH_MGC_18"
/tissue_type="large cell carcinoma"
/lab_host="DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                    BF980462
AL580649
AL524830
                                                                                                                                                                                                                                                                                                  BI334795
AW249421
                                                                                                                                                                                                                                                                                                                                                                                        AI056463
BE537419
BF958045
                                                                                                                                 AW245825
BI260297
                                                                                                                                                                                                                                                                                                                                             AJ346557
BE879384
                            BG491103
                                                                                                                                                                                                                        BG395768
                                                                                                                                                                                                                                          AW732049
                                                                                                                                                                                                                                                                                     AW732087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence.
BG488658
BG488658.1 GI:13450165
 human.
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
BG488658
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
 O
                                                                                                  2002, 17:28:25; search time 1183.24 Seconds (without alignments) 7483.284 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            602269415
601440565
602403406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601569557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               602013145
602756115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG488658 602534588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 602739620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602947659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    602527493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2822901.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE733056
BG4765478
BG4765740
BG765790
BG765790
BE34254
BF136814
BF196814
BF968344
BF968344
BF968344
BF968344
BF968348
BF3483338
                                                                                                                                                                                             1 cggctcgagcggctcgagcg.......
                                                                                                                                                                                                                                                                                                                                  22703874
               GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                       11351937 segs, 5372889281 residues
                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE733056
BG765478
BG479937
BG765790
AW245467
BF342354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE968344
BE897893
BG334974
BI193338
                                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG488658
                                                                                                                                                                                                                             OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_gss_pro: *
em_gss_rod: *
em_gss_vrt: *
em_gss_other: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_est2:*
gb_htc:*
gb_gss:*
em_gss_iun:*
em_gss_inv:*
em_gss_inv:*
                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0 Maximum DB seq length: 200000000
                                                                                                                                                            US-09-525-867-9
824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_esthum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estpl:*
em_estba:*
em_estro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_estov:*
em_htc:*
gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_estin: *
em_estom: *
                                                                                                      February 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         711
813
836
742
742
586
804
788
936
704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                        EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match
```

26450786011 O

Result No.

```
Homo sapiens

Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

S NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

AL Contact: Robert Strausberg, Ph.D.

Email: Gapbs r@mail.nih.gov

Tissue Procurement: ATCC.

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov

Plate: LLCAS, Organisme. Acolumn: 16

High quality sequence stop: 711.

Location/Qualifiers

Location/Qualifiers

Lucae: "IMAGE: 3844119"

//clone="IMAGE: 3844119"

//clone="IMAGE: 3844119"

//clone="IMAGE: Arrayed of the IMAGE of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Si
Matches 636;
        SOURCE
                                                                                                     AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     309
                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                òχ
/note="Organ: lung; Vector: pOTB7; Site_1: Xho1; Site_2: ECORI; CDNA made by oligo-dT priming. Directionally cloned into EcoRI/Xho1 sites using the following 5' adaptor: GGCAGGAG(G). Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-CDNA synthesis kit (Stratagene) and Superscribt II RT (Life Technologies). Note: this is a NHL MGC Library."
                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        699
                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gcaccccgctacgacatggaccgctttggcgtggtcttccgcgcccagcccgcgccagtcc 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaggecaagatggeggtgetgteageteetggeetgegeggetteeggateettggtetg
                                                                                                                                                                                                                                                                                                                                                      99cccaagcagcacccaagcctgcctgccaaaggccagagccgtggctcccaaacccagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggotactaccactattcotactcggtggtgaggggctgcgaccgcatcgtgcccgtggac
                                                                                                                                                                                                                                                                                                                                                                                                               cgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  atctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCTACATCCCAGGCTGCCCACCTACGGCCGAGGCCCTGCTGCTACGGCATCCTGCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCCCAAGCACCACCAGCCTGCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tctctgtggcccatgaccttcggcctggcctgcgccgtggagatgatgcacatggca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCACCCCCCTACGACATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tacgaccagatgccggagccgctacgtggtctccatggggagctgccaacggagga
                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                  Length 695;
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                Score 643; DB 11;
Pred. No. 1.7e-171;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      730 egcegeegeegaageetgtegeegteetgteeee 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGCCGCCGCGGAGCCTGTCGCCGTCCTGTCCCC
                                                                                                                                                                                                                                                78.0%;
99.9%;
                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                          693;
                                                                                                                                                                                                                                                Query Match
Best Local (
                                                                                                                                                                                                                                                                      Best Loca
Matches
                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             662
                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                     C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             542
                                                                                                                                                                                                                                                                                                                                                                                                            130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
/tissue_type="fortlocarcinoma" / tissue_type="fortlocarcinoma" / lab host="DH10B (phage=resistant)" / lab host="DH10B (phage=resistant)" / lab host="DH10B (phage=resistant)" / lab host="Coran: placenta; vector: poTB7; site_1: XhoI; site_2: ECCRI, CDNA made by oligo-dT priming.

Directionally: cloned into ECCRI/XhoI sites using the lollowing 5 adaptor: GGCAGGAG(G). Size=selected 550bpp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis Kit (Stratagene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           582
                                                                                                                                                                                                                                                                                                                                                                                              222
                                                                                                                                                                                                                                                                                                                                                                                                                                128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             488
                                                                                                                                                                                                                                                                                                                          103 ctgcgcggcttccggatccttggtctgcgctccagcgtgggcccggctgtgcaggcacga 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 368
                                                                                                                                                                                                                                                                                                                                                          68
                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                 gacetegteaactgggeeegeeggagttetetgtgggeeeatgaeetteggeetggeetge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          249 TGCGCCGTGGAGATGATGCACATGCCAGCACCCCGCTACGACCATGGACCGCTTTGGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggtgtccatcagagcgtggccaccgatggcccaagcagcacccagcctgccctgccaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tgcgccgttggagatgatgcacatggcagcaccccgctacgacatggaccgctttggcgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aagatggccccagcgcttcgcaaggtctacgaccagatgccggagccgcgctacgtggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tecatggggagetgegeeaacggaggaggetactaceactattectacteggtggtggggg
                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                    Score 636; DB 10; I
Pred. No. 1.6e-169;
0; Mismatches 0;
                                                                                                                                                                                                                                         77.2%; Scur
100.0%; Pre
                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                       al Similarity
636; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           φ
```

- EST 15-SEP-2000 CDNA clone IMAGE:3844119 5'

Homo sapiens

BE733056 711 bp n 601569557F1 NIH_MGC_21 Hc mRNA sequence. BE733056 BE733056.1 GI:10147048 EST.

LOCUS

BE733056

ACCESSION VERSION KEYWORDS

989 575 746 635

3

us-09-525-867-9.rst

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 836) NIH-MGC http://mgc.nci.nih.gov/. NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG479937 836 bp mRNA EST 21-MAR-2001 602527493F1 NIH_MGC_21 Homo sapiens CDNA clone IMAGE:4651103 5'
                                                    156 GGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCGGCGGGGGTTCTCTGTGGGCCCATGAC 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at: http://mmage.llnl.gov
                                                                                                                                                                                                                               507 gccgcgctacgtggtctccatggggagctgcgacaacggaggaggctactaccactattc
                                                                                                                                                                                                                                                                                                                                                                                                                                              cccacctacggccgaggccctgctctacggcatcctgcagctgcagagggaagatcaagcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtgtggcccatgac
                                                                                                   327 cttcggcctggctgctgcgcgtggagatgatgcacatggcagcacccggctacgacat
                                                                                                                                 ggaccgctttggcgtggtcttccgcgcccagcccgcccagtccgacgtcatgatcgtggc
                                                                                                                                                                                                                                                                                                                  cggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           516 CCCACCTACGGCCGAGGCCCTGCTACGGCATCCTGCAGCTGCAGGAAGAACATCAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone-"IMAGE:4651103"
/clone_lib="NH_MCG_21"
/fissue_type="choriocarcinoma"
/lab_host-"DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plate: LLCM1433 row: i column: 24
High quality sequence stop: 751.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: Cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG479937.1 GI:13412216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      747 gtcgcc 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGCC 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                         387
                                                                                                                                                                                                                                                                                                               447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
  267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                   - q
                                                                                                                                            Db
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                             QΫ́
                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
  à
                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9606"
/dlone="IMAGE:4868923"
/clone="IMAGE:4868923"
/clone="IMAGE:4868923"
/clone="IMAGE:4868923"
/clone="IMAGE:4868923"
/tlssue_type="melanotic melanoma, high MDR (cell line)"
/tlssue_type="melanotic melanoma, pdfBT; site_1: XhoI: Site_2:
/clote="Organ: skin: Vector: poTBT; site_1: XhoI: Site_2:
/cote="Organ: skin: Vector: poTBT; site_1: XhoI: Site_2:
/cote_anomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomalianomali
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 813) NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: cgapbs.remail.nih.gov
Tissue Procurement: ArCC/DCTD/DTP
CDNA Library Preparation: Ling Mang/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLCMI739 row: m column: 20
High quality sequence stop: 708.
                                                                                                                                                                                                                                                                                                                                                                                    BG765478 813 bp mRNA EST 15-MAY-2001
602738979P1 NIH_MGC_49 Homo sapiens CDNA clone IMAGE:4868923 5'
MRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        147 ggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcagcaccca 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            549 GCCCTGCTCTACGGCATCCTGCAGCTGCAGGAAGATCAAGCGGGAGCGGAGGCTGCAG 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36 GGCTGTGCAGGCACGAGGTGTCCATCAGAGCGTGGCCACCGATGGCCCAAGCAGCAGCACCA 95
                        99ctgcgaccgcatcgtgcccqtggacatctacatcccaggctgcccacctacggccgag
                                                                                                   643 gccctgctctacggcatcctgcagctgcagaggaagatcaagcgggagcggaggctgcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 813;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73.5%; Score 606; DB 11; I
llarity 100.0%; Pred. No. 3.6e-161;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                 /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG765478.1 GI:14076131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Library. |"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1, .813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Source
                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96
                                                                                                                                                                                                                                                                                                                                   RESULT
BG765478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                              g
                                                                                                à
                                                                                                                                               q
                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
```

рe

рe

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone=Inbefl:4869532"
/clone=Inbefl:4869532"
/clone=Inbefl:4869532"
/clone=Inbefl:4869532"
/clone=Inbefl:481062.49"
/tissue_type="melanotic melanoma, high MDR (cell line)"
/lab_host="hill (phage-resistant)"
/note="Organ: skin; vector: porB7; site=1: XhoI; site_2:
EcoRI; chan made by oligo-dr priming Directionally cloned into EcoRI/XhoI sites using the following 5' adaptor:
GGCACAGG(G): Size-selected >500bp for average insert size
1.8kb. library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley)
using ZAP-conA synthesis kit (Stratagene) and Superscript
Library | "
                                              Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapos-r@mail.nih.go.
Tissue Procusement ATCC/DCTD/DTP
Tissue Procusement ATCC/DCTD/DTP
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://inage.llnl.go.
Plate: LLCM1741 row: g column: 05
High quality sequence stop: 739.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGCGCTACGTGGTTCTCCATGGGGAGCTGCGCCAACGGAGGAGGCTACTACCACTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gccgcgctacgtggtctccatggggagctgcgccaacggaggagggtactactattc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cccacctacggccgaggccctgctctacggcatcctgcagctgcagaggaagatcaagcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggaccgctttggcgtggtcttccgcgcgcccggcgccagtccgacgtcatgatcgtggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccaggctg
                   .nih.gov/.
Health, Mammalian Gene Collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70.4%; Score 580; DB 11; L llarity 100.0%; Pred. No. 7.7e-154; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  224 g
      1 (bases 1 to 742)
NIH-MGC http://mgc.nci.
National Institutes of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
es 580; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Loca
Matches
    REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          627
                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
/note="Organ: placenta; Vector: pOTB7; Site_1: XhoI; Site_2: ECORI; CDNA made by oligo-dT priming.

Site_2: ECORI; CDNA made by oligo-dT priming.

Directionally cloned into ECORIX/AND: Sites using the following 5' adaptor: GGGACGAG(G). Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of Callifornia, Berkeley) using ZAP-cDNA synthesis kit (Stratusgene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               259
                                                                                                                                                                                                                                                                                                                                                                          agtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtggc 319
                                                                                                                                                                                                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                                                                                                                                                                                       379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           togtggccggcacactcaccaacaagatggcccagcgcttcgcaaggtctacgaccaga 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       488
                                                                                                                                                                                                                                                   tgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagca 199
                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-MAY-2001
IMAGE:4869532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gcacccagcctgccctgccaaaggccagagccgtggctcccaaaccccagcagccggggcg
                                                                                                                                                                                                                                                                                                                                                                                         actattcctactcggtggtggtgggggctgcgaccgcatcgtgcccgtggacatctacatcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acgacatggaccgctttggcgtggtcttccgcgcccagcccgcgccagtccgacgtcatga
                                                                                                                                                                                                                      ·
0
                                                                                                                                                                                        Length 836;
                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST
clone
                                                                                                                                                                                      Query Match 73.1%; Score 602; DB 11; I
Best Local Similarity 100.0%; Pred. No. 4.7e-160;
Matches 602; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   742 bp mRNA
NIH_MGC_49 Homo :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG765790 742 bp m 602739620F1 NIH_MGC_49 Ho mrNA sequence.
BG765790 GI:14076443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                   140
                                                                                                                                                                                                                                                                               69
                                                                                                                                                                                                                                                                                                                                           129
                                                                                                                                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                                                                                                                                        189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         740
                                                                                                                                                                                                                                                                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                                       320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
BG765790
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
```

g

ΩŸ

ò g ò

엄 ò d ŏ g

ð

g ò a

g

g ò

ŏ

g

á g

ð

ö

Gaps

ö

Length 742; Indels 266

46

154

446

334

506

394

266

454

626

686

514

386 274 S

SOURCE ORGANISM

ACCESSION VERSION KEYWORDS REFERENCE AUTHORS TITLE JOURNAL COMMENT

RESULT 6 AW245467/c DEFINITION

ŏ d

```
526 AACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCTTCGGCCTGGCCTGCTGCGCCGTG 467
   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. .804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF342354.1 GI:11289355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
BF342354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                         g
                                                                                       δy
                                                                                                                                                           qq
                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                           QΫ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \overset{\lambda}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: cgapbs:r@mail.nih.gov
Email: cgapbs:r@mail.nih.gov
Tissue Procurement: DTD/DTP cDNA Library Preparation: Ling
Tissue Procurement: DTD/DTP cDNA Library Arrayed by: The I.M.A.G.E.
Consortium (LLNL) DNA Sequencing by: Berkeley MGC Sequencing
project Clone distribution: MGC clone distribution information can
be found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/Dryfinage/Ajmage.html Base Calling / Quality
Scores: PHRED from University of Mashingtion Genome Center. Vector
Trimming: cross_match from University of Washingtion Genome Center
PHRAP suite. Poly-T identification: patmatch.pl from Berkeley
Drosophila Genome Project. University of Mashingtion Genome Center:
http://www.genome.washington.edu Polyadenylation: Based upon the
presence of a XhoI site followed by a run of 14 or more T residues
at the beginning of the sequence, this cDNA insert was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="mail.or" | carcinoma" | /tissue_type="mail.or" | call_line="mail.or" | call_line="mail.or" | call_line="mail.or" | call_line="mail.or" | call_line="mail.or" | call_or" | call_or | call or | ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                      AW245467 586 bp mRNA EST 07-JAN-2000
2822901.3prime NIH_MGC_7 Homo sapiens cDNA clone IMAGE:2822901 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     232 gtggeteceaaacecageagegeggggggggtgtgtgtgtggegaagetggatgacetegte 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleoston Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 5080)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC) Uppublished (1999)

Other_ESTS: 2822901.5prime
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         586 GIGGCICCCAAACCCAGCAGCAGGGGGGGGAGIAIGIGGGGGCCAAGCIGGAIGACCICGIC 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aactgggcccgccggagttctctgtggcccatgaccttcggcctggcctgctgcgcgtg 351
                                     515 CCCACCTACGCCCGAGGCCCTGCTCTACGGCATCCTGCAGCTGCAGAGGAAGATCAAGCG 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
.
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 69.9%; Score 576; DB 10; I
Best Local Similarity 100.0%; Pred. No. 1.2e-152;
Matches 576; Conservative 0; Mismatches 0;
                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2822901"
/clone_lib="NIH_MGC_7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polyadenylated.
Plate: LLCML0 row: J column: 22
High quality sequence stop: 474.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW245467
AW245467.1 GI:6588460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
```

FEATURES

BASE COUNT ORIGIN

292

δŏ g

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1. (Dassa 1 to 804)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Lu pubblished (1999)

Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov

Tissue Procurement: David N. Louis, M.D.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

http://inage.llni.gov

Plate: LLAM9409 row: j column: 11

High quality sequence stort: 2

High quality sequence stort: 2

High quality sequence stort: 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF342354 804 bp mRNA EST 22-NOV-2000
602013145F1 NOI_CGAP_Brn64 Homo sapiens cDNA clone IMAGE:4148842
5', mRNA sequence.
BF342354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata, Vertebrata, Euteleostomi;
Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="IMGE:4148842"
/clone_lib="NOI_CGAP_Brn64"
/tissue_type="glioblastoma with EGFR amplification"
/lab_host="Pali0B (T1 phage-resistant)"
/note="Organ: brain; Vector: pCMV-SPORT6; Site_1: Not1;
                                                                                                                                                                                                                                                                                                                                107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    771
531
                                                                                                                                                                                                                                                                                                                                                                                                                                                592 egeategtgecegtggacatetacateceaggetgeceaeetaeggeegaggeeetgete 651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           652 tacggcatcctgcagctgcagaggaagatcaagcgggagcggaggctgcagatctggtac 711
                                                                                                            412 gecagecegegecagteegaegteatgategtggeeggeacaeteaceaacaagatggee 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 cGCAGGTAGCGCCGCCGCCGCCGCCGGAGCCTGTCGCCGTCCTCTCCCCAGCCTGCT 47
                                                                                                                                          cgcaggtagcgccgccgccgccgccgcggccgagcctgtcgccgtccccagcctgct
                                                                                                                                                                                                                         472 ccagogottogoaaggtotacgaccagatgooggagooggogotacgtgggtotocatgggg
```

us-09-525-867-9.rst

```
BF968344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctgcc 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCC 5
                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 268
                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                88
                                                                                                                                                                                                                                                                                                                                                                                                                                       204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
BF968344
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Op
                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03
                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 788) NIH-MGC http://mgc.nci.nih.gov/. NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC)
 đТ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             605
                                                                                                                           249
                                                                                                                                                                                                                                                                                                                                                                 545
                                                                                                                                                                           185
                                                                                                                                                                                                  129
                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                      305
                                                                                                                                                                                                                                                                                                                     365
                                                                                                                                                                                                                                                                                                                                            309
                                                                                                                                                                                                                                                                                                                                                                                                                485
                                                                                                                                                                                                                                                                                                                                                                                                                             489
Site_2: Sall; Cloned unidirectionally. Primer: Oligo Average insert size 1.57 kb. Constructed by Life Technologies. Note: this is a NCI_CGAP Library." 268 C 255 g 132 t
                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BI195871 788 bp mRNA EST 10-JUL-2001
602756115F1 NIH_MGC_19 Homo sapiens cDNA clone IMAGE:4891946
                                                                                                                                                                                         aggaggetactaceactattectacteggtggtgaggggetgegaeegeategtgeeegt
                                                                                                                                                                             totgogotcoagogtgggocoggotgtgcagggaaggtgtcoatcagagcgtggccac
                                                                                                                                                                                                                                        CGATGGCCCAAGCAGCACCCAGCCTGCCTGCCAAAGGCCAGAGGCGTGGCTCCCAAACC
                                                                                                                                                                                                                                                                                                                       gagttetetgtgggeeeatgaeetteggeetggeetgetgegeegtggagatgatgeaeat
                                                                                                                                                                                                                                                                                                                                                                                                                  gtccgacgtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggtctacgaccagatgccggagccgctacgtggtctccatgggggagctgccaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   490 AGGAGGCTACTACCACTATTCCTACTCGGTGGGGGGCTGCGGACCGCATCGTGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATC
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                           cgatggcccaagcagcccagcctgcctgccaaaggccagagccgtggctcccaaacc
                                                                                                                                                                                                                                                                         cagcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccg
                                                                                                       ;
0
                                                                                  Length 804;
                                                                                                       Indels
                                                                               69.5%; Score 573; DB 11; I
llarity 100.0%; Pred. No. 6.6e-152;
Conservative 0; Mismatches 0;
                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ggacatctacatcccaggctgcccacctacggc 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BI195871.1 GI:14650891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence.
BI195871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                           Local Similarity
es 573; Conserv
                                   ď
                                  149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     æ
                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
COMMENT
                                                                                                     Matches
                                                                                                                                                   10
                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                             190
                                                                                                                                                                                                                                                                                                                                           250
                                                                                                                                                                                                                                                                                                                                                                   366
                                                                                                                                                                                                                                                                                                                                                                                          310
                                                                                                                                                                                                                                                                                                                                                                                                                                       370
                                                                                                                                                                                                                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 550
                                                                                                                             99
                                                                                                                                                                           126
                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                      246
                                                                                                                                                                                                                                                                                                                     306
                                                                                                                                                                                                                                                                                                                                                                                                               126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
BI195871
```

g

δ g δλ

g ò QQ 9

 $Q_{\overline{Y}}$ d ò ద δ d QΥ g QY g

g

ò

```
DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC.E. Consortium/LLNL at: image.llnl.gov
Plate: LLCMI71 row. m column: 03
Plate: LLCMI71 row. m column: 03
Plate: LLCMI71 row. m column: 03
High quality sequence stop: 770.

1. 78

Location/Qualifiers

1. 78

Lorganism="Homo sapiens"

Ab_xref="taxon:9606"

/clone='Inb="NIH_MGC.19"

/clone='Inb="NIH_MGC.19"

/tissue_type="neuroblastoma"

/lab_host="meuroblastoma"

/lab_host="meuroblastoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144 cccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcagcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccagcotgocotgocaaaggocagagocgtggotcocaaacccagcagccggggggggta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148 CCAGCCTGCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGCAGCGGGGCGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gaccttcggccttggcctgctgcgccgtggagatgatgcacatggcagcacccgctacga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATGGACCGCTTTGGCGTGGTCTTCCGCGCCACCCGCGCCAGTCCGACGTCATGATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggccggcacactcaccaacaagatggccccagogcttcgcaaggtctacgaccagatgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     catggaccgctttggcgtggtcttccgcgccagcccgccagtccgacgtcatgatcgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             388 GGCCGCCACACTCACCAACAAGATGGCCCCAGCGCTTCGCAAGGTCTACGACCAGATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ·;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 66.1%; Score 545; DB 11; L
Best Local Similarity 100.0%; Pred. No. 4.8e-144;
Matches 545; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ďq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           936
```

ó

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE CO
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . ð
    à
                                             음
                                                                                   ò
                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="NIH_MGC_84"
/tissue_type="adrenal cortex carcinoma, cell line"
/tissue_type="adrenal cortex carcinoma, cell line"
/tis_bost="bH10B (phage-resistant).
/hote="Organ: adrenal gland; Vector: pCNV-SPORT6; Site_1:
Not1; Site_2: Sall; Cloned unidirectionally; oligo-dT
primed Average insert size 1.229 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC_Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 936)
  502269415F1 NIH_MGC_84 Homo sapiens cDNA clone IMAGE:4357803 5'
                                                                                                                                                                                                                                                                                                                                       CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
Plate: LLAM9994 row: m column: 04
High quality sequence stop: 704.

L. 936
L. 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90 gtcagctcctggcctgcgggcttccggatccttggtctgcgctccagcgtgggcccggc 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100 TGTGCAGGCACGAGGTGTCCATCAGAGCGTGGCCACCGATGGCCCAAGCAGCAGCACCCAGCC 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270 ggccaagctggatgacctcgtcaactgggcccgccggagttctctgtggcccatgacctt 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              330 cggcctggcctgctgcgccgtggagatgatgcacatggcagcaccccgctacgacatgga 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       280 CGGCCTGGCCTGCTGCGCCGTGGAGATGATGCACATGGCAGCACCCCGCTACGACATGGA 339
                                                                                                                                                                                                           NIH WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: gqapbs r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40 GTCAGCTCCTGGCCTGCGGGCTTCCGGATCCTTGGTCTGCGCTCCAGCGTGGGCCCGGC 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150 tgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcagcaccagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         160 TGCCTGCCAAAGGCCAGAGCCGTGCCTGCCAAACCCAGCAGCCGGGGCGAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   220 GGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGGAGTTCTCTGTGTGGCCCATGACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cogettiggegiggtetteegegeeeageeegeeagteegaegteatgategiggeegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccggagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ch 65.4%; Score 539; DB 11; Length 936; 11 Similarity 100.0%; Pred. No. 2e-142; 539; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4357803"
                                                               BF968344.1 GI:12335559
                      mRNA sequence.
BF968344
                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  192
                                                                                                            human.
                                                                                        EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
DEFINITION
                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                 TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                          ACCESSION
                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                  AUTHORS
                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
```

```
/clone_lib="NIH_MGC_?2"
/tissue_type="melanotic melanoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: skin; Vector: pcWv-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dr.
average insert size 2 kb. Library constructed by Life
                                                                                                                                                                                                                                                                                                                                                           Box saplens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 883)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: cgapbs-remail.nih.gov
Tissue Procurement: ATC/DCTD/DTP
CDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Theoryte Genomics, Inc.
Clone distribution: MGC.clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM9764 row: b column: 17
High quality sequence stop: 726.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cetggcetgctgcgccgtggagatgatgcacatggcagcaccccgctacgacatggaccg 392
93 agotectggcctgccgcggcttccggatecttggtctgcgctccagcgtgggcccggctgt 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      153 gcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcagcacccagcctgc 212
                                                                                                                                                                                                                      BE897893 883 bp mRNA EST 20-OCT-2000 601440565F1 NIH_MGC_72 Homo sapiens CDNA clone IMAGE:3925168 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 883;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 65.0%; Score 536; DB 11; I
Best Local Similarity 100.0%; Pred. No. 1.5e-141;
Matches 536; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
/clone="IMAGE:3925168"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              282 9
                                                                                                                                                                                                                                                                               BE897893
BE897893.1 GI:10363813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Technologies.
276 c
                                                                                                                                                                                                                                                              mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333
                                                                                                                                                                                RESULT 10
BE897893
```

ö

ω

```
AGATGGCGGTGCTGTCAGCTCCTGGCCTGCGCGCTTCCGGATCCTTGGTCTGCGCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                        257
                                                                                                                                                                                                                                              317
                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                       497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
COMMENT
                                    137
                                                                                                       197
                                                                                                                                                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BI193338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                q
                                                                                                                                     g
                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                       à
                                                                                                                                                                        ^{\circ}
                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /Lissue_type="choriocarcinoma"
/Lissue_type="choriocarcinoma"
/Lisb.host="DH10B (phage-resistant)"
/Lib.host="DH10B (phage-resistant)"
/Lib.host="Organ: placenta; Vector: pOTB7; Site_1: XhoI;
Site_2: EcoRi, CDNA made by oligo-dT priming.
Site_2: EcoRi, CDNA made by oligo-dT priming.
Directionally cloned into EcoRi/XhoI sites using the following $' adaptor: GGCAGGAG(G). Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies):
240 c 229 g 121 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ó:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurent: Arayad by: The I.M.A.G.E. Consortium (LLNL)
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Prayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLCM1219 row: k column: 01
High quality sequence stop: 699.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 704)
                                                                                                                                                                                          572
                                                                                    360
                                                                                                                        512
                                                                                                                                        241 CCTGGCCTGCTGCGCGTGGAGATGATGCACATGGCAGCACCCCGCTACGACATGGACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NIH WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                   27-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                  602403406F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE: 4541304
                                                                    513 ctacgtggtctccatggggagctgccaacggaggaggtactaccactattcctactc
                                                                                                                                                                                                           393 ctttggcgtggtcttccgcgccagcccgccagtccgacgtcatgatcgtggccggcac
                                                                                                                    453 actcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccggagccgcg
                                                                                                                                                                                                                                                       Similarity 100.0%; Pred. No. 3.3e-141; Conservative 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4541304"
/clone_lib="NIH_MGC_21"
                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence.
BG334974
BG334974.1 GI:13141412
                                                                                                                                                                                                                                                                                                                                                                                   704 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                 BG334974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Simi
Matches 535;
                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                RESULT 1
BG334974
                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                q
                                                 à
                                                                                 셤
                                                                                                                      δ
                                                                                                                                                   Db
                                                                                                                                                                                      δ
                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                          g
```

77 agatggcggtgctgtcagctcctggcctgcgcgctccggatccttggtctgcgctcca 136

δλ

```
NIH WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Inpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
Tobna Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LicMl853 row: f column: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 586)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI193338 586 bp mRNA EST 10-JUL-2001 602947659F1 NIH_MGC_42 Homo sapiens cDNA clone IMAGE:5090702 5'
                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gctacgacatggaccgctttggcgtggtcttccgcgccagcccgcgccagtccgacgtca 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gegiggeceggetgigeaggeaegaggigtecateagagegiggecacegaiggeceae 196
                                                                                                                           256
                                                                                                                                                                                   122 GCAGCACCCAGCCTGCCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGCAGCCGGG 181
                                                                                                                                                                                                                                                                                                                                                                          ggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagcaccc 376
                                                                                                                                                                                                                                                                                                                                                                                                            242 GGCCCATGACCTTCGGCCTGCGCTGCGCCGTGGAGATGATGATGCACATGGCAGCACCCC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgacc 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agatgeeggageegetaegtggteteeatggggagetgegeeaaeggaggaggetaet 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="epithelioid carcinoma cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: pancreas; Vector: pOTB7; Site_1: XhoI;
Site_2: EcoRI; cDNA made by oligo-dT priming.
Directionally cloned into EcoRI/XhoI sites using the
                                                                                                                           gcagcacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagcggg
                                                                                                                                                                                                                                                  gegagtatgtggtggccaagetggatgacetegtcaaetgggecegeeggagttetetgt
                                                                                                                                                                                                                                                                                    182 GCGAGTATGTGGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGT
                                    62 GCGTGGGCCCCGGCTGTGCAGGCACGAGGTGTCCATCAGAGCGTGGCCACCGATGGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          422 AGAIGCCGGAGCCGCGCTACGTGGTCTCCATGGGGAGCTGCGCCCAACGGAGGAGGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:5090702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="NIH_MGC_42"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 586.
Location/Qualifiers
1.586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BIJ93338.1 GI:14648358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
```

Φ

```
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                 526;
                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                              Source
                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                       163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     446
                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              583
                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                        Best
                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                               D.
                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΩĐ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΩĐ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ. o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta \lambda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΟŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
following 5' adaptor: GGCACGAG(G). Size-selected >500bp for a versage insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-CDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies). Note: this is a NIH_MGC Library. |" Life Technologies).
                                                                                                                                                ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA clone IMAGE:4101725 5'
                                                                                                                                                                    512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostor Bukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostor Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases 1 to 773)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                   332
                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                               452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           632
                                                                                                                                                                                                                    gcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcagcacccagcctgc 212
                                                                                                                                                                                                                                                                   cotgccaaaggccagagccgtggctcccaaacccagcagccggggcgagtatgtggtggc 272
                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                 caagctggatgacctcgtcaactgggcccgcoggagttctctgtggcccatgaccttcgg
                                                                                                                                                                                                                                                                                                                               122 CCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGCAGCAGGGGGGGAGGTATGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                           actcaccaacaaqatggcccagcgcttcgcaaggtctacgaccagatgccggagccgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   362 ACTCACCAACAAGAIGGCCCCCAGCGCTICGCAAGGICIACGACCAGAIGCCGGAGCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggtggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccaggctgcccacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482 GGTGGTGAGGGGCTGCGACCGCATCGTGCCCGTGGACATCTACATCCCAGGCTGCCCACC
                                                                                                                                                                                                                                                                                                                                                                 cctggcctgctgcgccgtggagatgatgcacatggcagcacccgctacgacatggaccg
                                                                                                                                                                                                                                                                                                                                                                                                               ctttggcgtggtcttccgcgcccagcccagtccgacgtcatgatcgtggccgcac
                                                                                                                                              .
0
                                                                                                                        Length 586;
                                                                                                                      Score 534; DB 11; Length 5 Pred. No. 7.3e-141; 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF206581 773 bp mRNA
601870924F1 NIH_MGC_19 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
BF206581
BF206581.1 GI:11100167
                                                                                                                      64.8%;
99.8%;
                                                                                                                                             584; Conservative
                                                                                                                                  Similarity
                                                                           Q
                                                                        66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                    Query Match
Best Local S
Matches 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                        COUNT
                                                                                                                                                                                                                   153
                                                                                                                                                                                                                                                                                                                                      182
                                                                                                                                                                                                                                                                                                                                                                333
                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                                                                                    302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                  273
                                                                                                                                                                                                                                                                                                                                                                                                             393
                                                                                                                                                                                                                                                                                                                                                                                                                                                            453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF206581
                                                                        BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COCUS
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                 ōλ
                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                            δ
```

```
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov
Plate: LLCM973 row: o column: 06
High quality sequence stop: 744.
Location/Qualifiers
rce
//db_xref="RAMGE:4101725"
//db_xref="taxon:6606"
//clone="IMAGE:4101725"
//clone="IMAGE:4101725"
//clone="IMAGE:4101725"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGTCCATCAGAGCGTGGCCACCGATGGCCCAAGCAGCACCAGCCTGCCCTGCCAAAG 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG419411 910 bp mRNA EST 14-MAR-2001
602446102F1 NIH_MGC_14 Homo sapiens cDNA clone IMAGE:4584528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggtgtccatcagagcgtggccaccgatggcccaagcagcacccagcctgccctgccaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gccagagccgtggctcccaaacccagcagccggggcgagtatgtggtggccaagctggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        343 tgcgccgtggagatgatgcacatggcagcacccgctacgacatggaccgcttgggcgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                266 TGCGCCGTGGAGATGATGCACATGGCAGCACCCCGCTACGACATGGACCGCTTTGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              463 aagatggccccagcgcttcgcaaggtctacgaccagatgccggagccgcgctacgtggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tccatggggagctgcgccaacggaggaggctactaccactattcctactcggtggtgagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtcttccgcgcccagcccagcccagtccgacgtcatgatcgtggccggcacactcaccaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggetgegacegeategtgeeegtggaeatetacateceaggetgee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 526; DB 11;
Pred. No. 1e-138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Pred. ...
                                                                                                                                                                                                                                                                                                                                                                                                                                             63.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
BG419411
LOCUS
DEFINITION
```

ö

```
MRNA sequence.
BG491103
BG491103.1 GI:13452615
                                                                                                                                                                                                                                         612 ctacateceaggetgee 628
                                                                                                                                                                                                                                                                                      541 cracarcccadecrece 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 555; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE .
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                   BG491103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                     a
                                                                                                                                            δ
                                                                                                                                                                                    g
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                  5
                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: DcTD/DTP
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
http://image.lln.gov d column: 01
http://image.lln.gov d column: 01
http://image.lln.gov acolumn: 01
High quality sequence stop: 702.
Location/Qualifiers
I. 910
Arrate="Laxon:966" | 1.910
Arrate="Laxon:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                 Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggccaagatggoggtgctgtcagctcctggcctgcggggcttccggatccttggtctgcg 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ogicatgalogiggocggcacactcaccaacaagatggccccagcgctlogcaaggicta 491
                                                                                                                                                                                       1 (bases 1 to 910)
NIH WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              occaagcagcacccagcctgcctgccaaaggccagagccgtggctcccaaacccagcag 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttc 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                372 accccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcgccagtccga 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GGCCAAGATGGCGGTGCTGTCAGCTCCTGGCCTGCGGGCTTCCGGATCCTTGGTCTGCG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCAAGCAGCACCCAGCCTGCCCTGCCAAAGGCCAGAGGCCGTGGCTCCCAAACCCAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 99.8%; Pred. No. 3.8e-133; Similarity 99.8%; Pred. No. 3.8e-133; 6; Conservative 0; Mismatches 1; Indels
                                                                                                                                               Craniata; Vertebrata; E
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                               BG419411.1 GI:13325917
mRNA sequence.
BG419411
                                                                                                                     Homo sapiens
                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Simi
Matches 556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                     ORGANISM
                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            432
                         ACCESSION
                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone='InAGE:4638441"
/clone='InAGE:4638441"
/tissue_type="large_cell carcinoma"
/tissue_type="large_cell carcinoma"
/tissue_type="large_cell carcinoma"
/tab_host='PHBIOB (phage-resistant)
/note='Organ: lung; Vector: pOTB7; Site_1: XhoI; Site_2:
FOORI; COORTAN made by oligo-dT priming Directionally cloned
into ECORIXA made by oligo-dT priming Directionally cloned
into ECORIXA made by oligo-dT priming the following 5, adaptor:
GGCACGAG(G). Library constructed by Ling Hong in the
laboratory of Gerald M. Rubin (University of Callionia,
Berkeley) using ZAP-CDNA synthesis kit (Stratagene) and
Superscript II RT (Life Technologies). Note: this is a
NIH_MGC Library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 738)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D.
Email: gapbs r@mail.nih.gov
Tissue Procurement: DCTD/DTP/Gazdar
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M. A.G.E. Consortium (LLNL)
DNA Sequencing by: They I.M. A.G.E. Consortium (LLNL)
DNA Sequencing by: They Ganomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lln.gov
plate: LLCM1400 row: j column: 10
High quality sequence stop: 738.

I. 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG491103 738 bp mRNA EST 27-MAR-2001 602519937F1 NIH_MGC_18 Homo sapiens cDNA clone IMAGE:4638441 5′
                                                         pe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133 tecagogtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggc 192
361 CGTCATGATCGTGGCCGGCACACTCACCAACAAGATGGCCCCAGGGGCTTCGCAAGGTCTA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 738;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61.3%; Score 505; DB 11;
ilarity 99.8%; Pred. No. 8.4e-133;
Conservative 0; Mismatches 1;
```

. 0

us-09-525-867-9.rst

ccaagcagcacccagcctgccctgccaaggccagagccgtggctcccaaacccagcagc 252 	cggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgcggagttct 312 	ctgtggcccatgaccttcggcctggcctgctgcgcgcgtggagatgatgcacatggcagca 372 	cocogctacgacatggacogctttggcgtggtcttccgcgccagcccgccagtccgac 432 	gtcatgatcgtggccggcacactcaccaacaagatggcccagcgcttcgcaaggtctac 492 	gaccagatgccggagccgcgctacgtggtctccatggggggctgccaacggaggaggc 552 	tactaccactattoctactcggtggtggggggtgcgaccgcatcgtgccgtggacatc 612 	tacatcccaggctgcc 628
193	253	313	373	433	493	553	613 541
Qy Db	QY	oy Ob	qq QA	QY Db	Q.y D.b	QY	Q Q

Search completed: February 12, 2002, 18:08:53 Job time: 2428 sec

```
February 12, 2002, 20:29:55 ; Search time 33.73 Seconds
(without alignments)
481.031 Million cell updates/sec
                                                                                                                                                                                                                  1 MAVLSAPGLRGFRILGLRSS.....ILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                   219241
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                              219241 segs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 summaries
                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 10%
Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                              US-09-525-867-1
1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR_68:*
1: pirl:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                            Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                          Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES Re-

	Description		NADH dehydrogenase		NADH dehydrogenase	NADH dehydrogenase	hypothetical prote	NADH dehydrogenase		NADH dehydrogenase		psbG homolog prote		NADH dehydrogenase			NADH dehydrogenase		NADH dehydrogenase	NADH dehydrogenase		NADH dehydrogenase	pspg protein - com	dehydrogen	psbG protein - ric						
	ID		S22371	S48826	T07603	T44818	T26329	S52286	S78166	F71692	D82821	E42573	H81221	F81992	F2PPG	C70413	E64677	C71838	C75388	H81252	T11899	E65000	D85869	T34623	F84221	S04437	C70647	C83316	F2NTG	A84948	F2R2G
	DB		7	7	7		7					7	N	~	Н	N	N	7	C1	ď								N			÷,
	Length		216	215	213	213	199	218	182	174	191	173	160	160	156	179	159	159	181	167	181	220	220	184	235	248	184	225	247	224	246
æ	Query Match Length DB		86.4	65.8	65.5	65.4	65.0	64.8	64.2	58.5	58.5	56.0	54.8	54.1	50.2	46.6	44.5	44.4	42.4	41.3	40.9	39.7	39.7	39.6	39.2	39.5	39.1	38,6	38.6	38.3	38.2
	Score		965.5	736	732.5	731	726.5	725	718	654.5	654	626	613	605	561	521	497.5	496.5	474	461.5	457	444	444	443	441.5	438	437.5	432	431.5	428	427.5
	esult No.	1 1 1 1	Н	7	m	4	2	9	7	8	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29

RESULT 2
S48826
NADH dehydrogenase (ubiquinone) (EC 1.6.5.3) chain PSST precursor - wild cabbage (S.Species: Brassica oleracea (wild cabbage)
C.Species: Brassica oleracea (wild cabbage)
C.Accession: S48826
R.Pogson, B.J.; Downs, C.G.; Davies, K.M.; Morris, S.C.; Buchanan-Wollaston, V. submitted to the EMBL Data Library, September 1994
A.Description: Nucleotide sequence of a cDNA clone from broccoli (Brassica oleracea A.Accession: S48827
A.Accession: S48826
A.Molecule type: mRNA

psbG protein - liv hypothetical ndbk	NADH dehydrogenase	psbG protein - whe	NADH denydrogenase NADH dehydrogenase	NADH dehydrogenase	probable NADH dehy	NADH dehydrogenase	NADH dehydrogenase	NADH dehydrogenase	probable NADH-ubiq	hypothetical prote	probable NADH-ubiq	co-induced hydroge	hydrogenase (EC 1.
'ZLVG	T09637	999608	F22MG S74216	S27978	C72621	PX0053	D69478	A75114	D71019	572281	E71017	5115	808625
Er P	1 O	30	F2	S	S	Ϋ́	06	A7	5	D7	E_7	7	Š
- L	101	2 80	1 F2	2 82	2 C7	_				_	2 E7	_	2 80
 -	1 7	۲,	248 I F2 245 2 S7	7	~	7	7	ď	~	7	7	7	7
243 1 F	226 2 T	245 2	⊣ 0	224 2	202 2	96 2	353 2	195 2	195 2	178 2 1	173 2	170 2 1	255 2
243 1 F	37.9 226 2 I	37.9 245 2	248 I	36.5 224 2	31.4 202 2	96 2	28.6 353 2	195 2	26.9 195 2	5 26.4 178 2 1	173 2	1 25.1 170 2 1	5 24.6 255 2

ALIGNMENTS

ò g Q a ò g ŏ g

```
T44018

NADH dehydrogenase (ubiquinone) (EC 1.6.5.3) chain PSST precursor [imported] - yell
NADH dehydrogenase (ubiquinone) (EC 1.6.5.3) chain PSST precursor [imported] - yell
NATHERIATE names: NADH ubiquinone oxidoreductase PSST subunit
C;Species: Lupinus luteus (yellow lupine)
C;Accession: 144818
R;Piekna, D.; Sikorski, M.; Augustyniak, H.
A;Pocession: L luteus mRNA for PSST subunit of the NADH:ubiquinone oxidoreductas.
A;Reference number: 22881
A;Accession: T44818
A;Accession: T44818
A;Accession: T44818
A;Accession: T44818
A;Accession: T44818
A;Accession: T44818
A;Residues: 1-213 <PIE>
A;Residues: 1-213 <PIE>
A;Residues: Experimental source: Lissue type root
C;Genetics:
A;Gene: PSST
C;Superfamily: psbG protein
C;Keywords: NAD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein W10D5.2 - Caenorhabditis elegans
() Species: Caenorhabditis elegans
() Species: Caenorhabditis elegans
() Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 20-Jun-2000
() Accession: T26329
R. Kershaw, J.
Submitted to the EMBL Data Library, September 1996
A; Reference number: 220200
A; Reference number: 220200
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Residues: 1-199 (WIL)
A; Status: preferences: EMBL:279758; PIDN:CAB02132.1; GSPDB:GN00019; CESP:W10D5.2
A; Experimental source: clone W10D5
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114 PRQSDVMIVAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRI 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27 ARGVHQSVATDGPSSTQPALPKARAVAP----KPSSRGEYVVAKLDDLVNWARRSSLWPM 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MAVLSAPGLR-----GFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54 PKPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65.4%; Score 731; DB 2; I
63.2%; Pred. No. 8.6e-60;
ive 28; Mismatches 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65.0%; Score 726.5; DB 2;
68.1%; Pred. No. 2e-59;
iive 30; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A, Map position: 1
A, Introns: 36/1; 102/3; 174/3
C, Superfamily: psbG protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 68.1
30; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 139; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Gene: CESP:W10D5.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Simi
nes 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Accession: T07603
R; Heiser, V.; Grohmann, L.; Brennicke, A.
Plant Mol. Biol. 31, 1195-1204, 1996
A; Title: The plant mitochondrial 22 kDa (PSST) subunit of respiratory chain complex I is A; Reference number: Z16044; MUID: 97071689
A; Accession: T07603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Superfamily: psbG protein
| Keywords: electron transfer; membrane-associated complex; mitochondrion; NAD; oxidored
                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A.Status: preliminary; translated from GB/EMBL/DDBJ
A.Molecule type: mRNA
A.Residues: 1-213 <HBI>
A.Forsidues: 1-213 <HBI>
A.Experimental source: cv. Desiree;green leaves
C.Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Species: Solanum tuberosum (potato)
C;Date: 14-May-1999 #sequence_revision 14-May-1999 #text_change 21-Jul-2000
A;Residues: 1-215 <POG>
A;Cross-references: EMBL:X82274; NID:9562281; PIDN:CAA57725.1; PID:9562282
                                                                                                                                                                                                                                                                                                                                                                                                                                                             66 KLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPP 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93 MAHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLINKMAPALRKVYDQMPEPRYVVSMGS 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                  35 SPATIPISYIRPGPPSTSAPPPGLSKTAEFVISKVDDLMNWARRGSIWPMIFGLACCAVE 94
                                                                                                                                                                                                                                                                                                                               33 SVAIDGPSSTQPALPKARAVAPKPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVE 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17 LRSSVGPAVQ-ARGVHQSVATDGPS-STQPALPKARAVAPKP-----SSRGEYVVA 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .53 CANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 213;
                                                                                                                                                                                                                              Length 215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NADH dehydrogenase (ubiquinone) (EC 1.6.5.3) 22K chain - potato
                                                                                                                                                                                                                                                                              30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65.5%; Score 732.5; DB 2;
68.0%; Pred. No. 6.2e-60;
ilve 22; Mismatches 29;
                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                            65.8%; Score 736; DB 2 73.5%; Pred. No. 3e-60;
                                                                                                                                                                                                                                                                              18; Mismatches
                                                                                             A)Genome: nuclear
C;Superfamily: psbG protein
C;Keywords: mitochondrion; NAD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAEALLYGILQLQRKIKRERRLQIWY 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAEALLYGILQLQKKINRRKDLLMWW 211
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 68.0
40; Conservative
                                                                                                                                                                                                                                                    Best Local Similarity
Matches 133; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Genome: nuclear
C;Superfamily: psk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Sim
Matches 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      213 R 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 215 K 215
                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                           A; Gene: PSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
```

ŏ g

ŏ g g

òγ

ò

```
Fribas.
Nabl dehydrogenase (ubiquinone) (EC 1.6.5.3) I chain B RP356 - Rickettsia prowazeki C'Species: Rickettsia prowazekii
C'Accession: F71692
R'Andersson, S.G.E.; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Ponten, T.; Alsma Nature 396, 133-140, 1998
A'7111e: The genome sequence of Rickettsia prowazekii and the origin of mitochondri. A; Reference number: A71630, MUID:99039499
A'72cession: F71692
A'72ctsus: preliminary; nucleic acid sequence not shown; translation not shown
A; Residues: 1-174 <AND>
A; Residues: 1-174 <AND>
A; Residues: 1-174 <AND>
A; Cross-references: GB:AJ235271; GB:AJ235269; NID:g3868717; PIDN:CAA14816.1; PID:g3:A; Reperimental source: strain Madrid E
C; Genetics:
A; Genetics:
C; Superfamily: psb6 protein
C; Keywords: NAD; oxidoreductase
A; Variety: ATCC 50394
C; Date: 29-Jan-1998 #sequence_revision 06-Feb-1998 #text_change 26-Aug-1999
C; Date: 29-Jan-1998 #sequence_revision 06-Feb-1998 #text_change 26-Aug-1999
C; Accession: 878166
R; Lang, B.F.; Burger, G.; O'Kelly, C.J.; Cedergren, R.; Golding, G.B.; Lemieux, C.;
Nature 387, 499-497, 1997
A; Title: An ancestral mitochondrial DNA resembling a cubacterial genome in miniatur.
A; Reference number: S78166
A; Accession: 878166
A; Accession: 878166
A; Molecule type: DNA
A; Molecule type: DNA
A; Mossidues: 1-182 c.LAN>
A; Molecule type: DNA
A; Mossidues: 1-182 c.LAN>
A; Mossidues: 1-182 c.LAN>
A; Cross-references: EMBL.AF007261; NID:g2258325; PIDN:AAD11899.1; PID:g2258365
A; Experimental source: ATCC 50394
A; Cross-references: EMBL.AF007261; NID:g2258325; PIDN:AAD11899.1; PID:g2258365
A; Experimental source: anticohondrion
C; Genetics: altochondrion
C; Superfamily: psbG protein
C; Superfamily: psbG protein
C; Keywords: mitochondrion; NAD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    58 SRGEYVVAKLDDLVNWARRSSLWPMFFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQS 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVD 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 654.5; DB 2;
Pred. No. 7.1e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 718; DB 2;
Pred. No. 1.1e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178 IYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      147 IVVPGCPPTABALLYGLLOLOKKIKRSRKTLYWLOK 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58.5%; Scor.
78.2%; Pred. No. /...
78.2%; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DIYIPGCPPTAEALLYGILQLQRKIKR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64.2%;
81.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 78.2%
Matches 115; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 127; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
F71692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                503
                                                                                                                                                                                                                                                                                                                                                                                                                                           (EC 1.6.5.3) chain PSST precursor - Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bancroft
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
S78166
778167 (Ubiquinone) (EC 1.6.5.3) chain 10 - Reclinomonas americana (ATCC C.Species: mitochondrion Reclinomonas americana
                                                                                                                                                                                                                                                                                                                                                                                                                             NaDH dehydrogenase (ubiquinone) (EC 1.6.5.3) chain PSST precursor - Arabidopsis thal C Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 08-May-1995 #sequence_revision 10-Nov-1995 #text_change 19-May-2000
C;Date: 08-May-1995 #sequence_revision 10-Nov-1995 #text_change 19-May-2000
C;Accession: S52286; T48536
C;Accession: S52286
A;Accession: S5286
A;Accession: T48536
A;Accession: S5286
A;Accession: T48536
A;Accession: T2222.160
C;Superiamily: pabG protein
C;Keywords: mitochondrion; NaD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
..
                                                                              TFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMP 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGIL 195
     10 AVGTRRLASTQAIASNSEA-PKGIATTGTPFLNPSSKAEYALARLDDVLNLAQRGSIWPL 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24 AVQARGV---HQSVAIDGPSS----IQPALPKARAVAPKPSSRGEYVVAKLDDLVNWAR 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21 AVAAASVSHLHTSLPALSPSTSPTSYTRPGPPSTSPPPFGLSKAAEFVISKVDDLMNWAR 80
                                                                                                                                                           EPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQLQRKIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76 RSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 64.8%; Score 725; DB 2; L. Best Local Similarity 68.2%; Pred. No. 3.1e-59; Matches 135; Conservative 20; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201 QLQKKINRRKDFLHWWNK 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196 QLORKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                             RERRIGIWYRR 213
                                                                                                                                                                                                                                                                                                              RKREAQLWYRR 199
                                                      83
                                                                                                       69
                                                                                                                                                           143
                                                                                                                                                                                                         129
                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                              189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81
                                                                                                       g
                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                     g
                                                         õ
                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
```

ó

.; 0

Length 173;

181

```
Nabla dehydrogenase I, B chain NMB0242 [imported] - Neisseria meningitidis (strain b C.Species: Neisseria meningitidis
C.Species: Neisseria meningitidis
C.Species: Neisseria meningitidis
C.Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 19-Jan-2001
C.Accession: HB1221
R;Tettelin, H.; Saunders, N.J.; Heidelberg, J.; Jeffries, A.C.; Nelson, K.E.; Eiser Hickey, E.K.; Haft, D.H.; Salzberg, S.L.; White, O.; Fleischmann, R.D.; Dougherty, ri, H.; Oin, H.; Vamathevan, J.; Gill, J.; Scarlato, V.; Masignani, V.; Plzza, M. Science 287, 1809-1815, 2000
A;Althers: Oramplete genome sequence of Neisseria meningitidis serogroup B strain MC5E A;Title: Complete genome sequence of Neisseria meningitidis serogroup B strain MC5E A;Accession: HB1221
A;Accession: HB1221
A;Accession: HB1221
A;Molecule Vype: DNA
A;Residues: 1-160 < TETP
A;Residues: 1-160 < TETP
A;Residues: 1-160 < TETP
A;Reperimental source: serogroup B, strain MC5B
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
781992
781992
Cybecides: Neisseria meningitidis
Cybecides: Neisseria meningitidis S.R.;
Cybecides: Neisseria meningitidis 224
Ayititle: Complete DNA sequence of a serogroup A strain of Neisseria menigitidis 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 VAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIP 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71 VAGTLINKMAPALRRVYDQLAEPRWVLSMGSCANGGGYYHYSYSVVRGADRVVPVDVYVP 130
                                                                                                                                                                                                                                                                                                                                                                                 62 YVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMI 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 YVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMI 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27 FLLTTEDIINWARNGSLHWMTFGLACCAVEMMQTSMPRYDLERFGTAPRASPRQSDLMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122 VAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54.8%; Score 613; DB 2; Length 160
73.9%; Pred. No. 4.2e-49;
ive 22; Mismatches 15; Indels
                                                                                                                                                                                                            Query Match 56.0%; Score 626; DB 2; Best Local Similarity 81.3%; Pred: No. 2.9e-50; Matches 113; Conservative 13; Mismatches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCPPTAEALLYGILQLQRKIKR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCPPTAEALLYGILQLQRK 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCPPTAEALLYGILQLQRR 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 73.99
Matches 105; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: NMB0242
C;Superfamily: psbG protein
                                                                                         psbG protein
C;Genetics:
A;Gene: NQO6
C;Superfamily: p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                           Cypecies: Xylella fastidiosa
Cybate: 18 494-2000 #sequence_revision 20-Aug-2000 #text_change 17-Nov-2000
Cyaccession: D82821
Ryanonymous, The Xylella fastidiosa Consortium of the Organization for Nucleotide Sequen
Nature 406, 151-157, 2000
A;Itile: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Tile: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Reference number: A82515; MID:20365717
A;Note: for a complete list of authors see reference number A59328 below
A;Reference number: A82515; MID:20365717
A;Note: for a complete list of authors see reference number A59328 below
A;Residues: 1-191 <SINA
A;Residues: 1-191 <SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C. Accession: E42573
R. Xu., X.; Matsuno-Yagi, A.; Yagi, T.
Blochemistry 31, 6925-6932, 1992
A.;Title: Gene cluster.of the energy-transducing NADH-quinone oxidoreductase of Paracoccu A; Reference number: A42573; MUD: 92345253
A.;Reference number: A42573; MUD: 92345253
A.;Status: preliminary
A.;Residues: preliminary
A.;Residues: 1-173 < XUI>
A.;Residues: 1-173 < XUI>
A.;Residues: 1-173 < XUI>
A.;Residues: 1-80478
A.;Residues: 1-173 < XUI>
A.;Residues: 1-173 < XUI
                                                                                                                                                                                                                                                    NQO6 subunit XF0306 [imported] - Xylella fastidiosa (str
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E42573

PabG homolog protein - Paracoccus denitrificans
C;Species: Paracoccus denitrificans
C;Species: Paracoccus denitrificans
C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 21-Nov-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81 ARLDLDRYGIVFRPSPRQSDVMIVAGTLVNKMAPALRKVYDQMPDPKWVISMGSCANGG 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99 PRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGG 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39 PSSTQPALPKARAVAPKPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 58.5%; Score 654; DB 2; Length 191
Best Local Similarity 72.1%; Pred. No. 8.8e-53;
Matches 119; Conservative 14; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141 YYHYSYSVVRGCDRIVPVDVYVPGCPPTAEALVYGILQLQKKIWR 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    159 YYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILOLORKIKR 203
    NADH-ubiquinone oxidoreductase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A,Gene: XF0306
C;Superfamily: psbG protein
                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
```

ö

Gaps

ö

Length 160;

us-09-525-867-1.rpr

D.E.

```
A;Cross references: GB:AE000631; GB:AE000511; NID:g2314421; PIDN:AAD08307.1; PID:g23
C;Superfamily: psbG protein
C;Reywords: electron transfer; membrane-associated complex; NAD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A,Cross-references: GB:AE000734; NID:g2983733; PIDN:AAC07297.1; PID:g2983736; GB:AEC
A,Experimental source: strain VF5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A:Title: The complete genome of the hyperthermophilic bacterium Aquifex aeolicus A;Reference number: A70300; MUID:98196666
A;Accession: C70413
                                                                                                                                                                                                                                                                                                                    C;Species: Aquifex aeolicus
C;Date: 08-May-1998 #sequence_revision 08-May-1998 #text_change 05-Nov-1999
C;Accession: C70413
R;Deckert, G; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-159 <TOM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-179 <AQF>
                                                                                                                                                                                                                                                                                          NADH dehydrogenase (ubiquinone) (EC 1.6.5.3) I chain nuoB - Aquifex aeolicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          57 SSRGEYVVAKLDDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 SDVMIVAGTLTINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPV 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46.6%; Score 521; DB 2;
ilarity 60.8%; Pred. No. 1.3e-40;
Conservative 33; Mismatcher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 497.5; DB 2
Pred. No. 1.7e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.5%; Scor.
59.6%; Pred. No. 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177 DIYIPGCPPTAEALLYGILQLQRKIKRE 204
                                                                                               179 YIPGCPPTAEALLYGILQLQRKIKR 203
                                                                                                                               124 LCPRCPPTAEALFFGVLQLQKTLMK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A)Gene: nuoB
C,Superfamily: psbG protein
C,Keywords: NAD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 59.6%
Matches 87, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nature 392, 353-358, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Genetics:
                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                             οy
                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pizero

Pizero

Pizero

C. Species: mitochondrion Paramecium tetraurelia

C. Species: mitochondrion Paramecium tetraurelia

C. Species: mitochondrion Paramecium tetraurelia

C. Accession: S07736; JS0035

R. Pritchard, A.E.; Seilhamer, J.J.; Mahalingam, R.; Sable, C.L.; Venuti, S.E.; Cummings,

Nucleic Acdids Ress. 18, 179-180, 1990

A. Mitcher Nucleotide sequence of the mitochondrial genome of Paramecium.

A. Accession: S07736

A. Reference number: S07725; MUD: 90174913

A. Residues: 1-156 CPRIS-

R. Pritchard, A.E.; Venuti, S.E.; Ghalambor, M.A.; Sable, C.L.; Cummings, D.J.

R. Pritchard, A.E.; Venuti, S.E.; Ghalambor, M.A.; Sable, C.L.; Cummings, D.J.

Gene 78, 121-134, 1989

A. Heference number: JS0231; MUD: 89357489

A. Recession: JS0235

A. Molecule type: DNA

A. Residues: 1-122, TFV, 126, G', 128-156 CPRIS-

A. Accession: JS0235

A. Molecule type: DNA

A. Residues: 1-122, TFV, 126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-122, TFV, 126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-122, TFV, 126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-122, TFV, 126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-126, G', 128-156 CPRIS-

A. Molecule type: DNA

A. Residues: 1-120, G', 128-156 CPRIS-

A. Molecule type: DNA

A
A;Reference number: A81775; MUD:20222556
A;Accession: F81992
A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-160 <PAR>
A;Residues: 1-160 <PAR>
A;Residues: Serogroup A, strain Z2491
C;Genetics: Serogroup A, strain Z2491
C;Genetics: NAMOOUS
C;Superfamily: psbG protein
C;Keywords: NAD; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .22 VAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIP 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59 RGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSD 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 YVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPROSDVMI 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119 VMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDI 178
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 KADFLKLSANNLISWARQGSFWPLTFGLACCALEMMRATVSRYDFDRFGVIFRATPRQAD 63
                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50.2%; Score 561; DB 1; Length 156; 63.4%; Pred. No. 2.4e-44; Live 33; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                        Length 160;
                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                        Ouery Match 54.1%; Score 605; DB 2; L
Best Local Similarity 73.2%; Pred. No. 2.3e-48;
Matches 104; Conservative 22; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131 GCPPTAEALIYGLIQLQQKIKR 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182 GCPPTAEALLYGILQLQRKIKR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best_Local Similarity 63.4
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A)Genetic code: SGC6
A)Start codon: ATA
C)Superfamily: psbG protein
C)Keywords: mitochondrion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9.
20.
20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

ä

1

```
g
  oy
ob
δ
```

Search completed: February 12, 2002, 20:45:24 Job time: 929 sec Db

οχ

OM nucleic

Run on:

Sequence:

Title: Perfect

Searched:

Database

11098765

0 0 0 0 0 0 0

. Q Result

```
Modified HIV-1 Env
Codon-optimised mu
Modified HIV-1 Env
Modified HIV-1 Env
Modified HIV-1 Env
                                                                                                                                                                                                                                                                                                                              HSVgB gene. Herpe
Partial nucleotide
DNA fragment encod
HIV 97120.modSF162
HIV 97120.modSF162
HIV 97140.mut.mod
HIV 97140.mut.mod
HIV 97140.mut8.mod
HIV 97140.mut8.mod
HIV 97140.mut8.mod
HIV 97140.modSF162
HIV 97140.modSF162
HIV 97140.modSF162
                                                                          N. meningitidis B
Zea mays DNA fragm
Cat flea head and
Genomic fragment #
              Arabidopsis thalia
Arabidopsis thalia
N. meningitidis pa
Neisseria meningit
                                                                                                                                                                                                                                                                                                 Truncated HSVgB ge
HSV surface antige
HSVgB gene. Herpe
                                                                                                                                   Human gene signatu
Total base seguenc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                          AAF21544
AAA81490
                                                                                                                                                                                                                                                                                                                 AAQ14455
AAQ14478
                                                                                                                                                                                                                                                                                                                                                                                                                      AAA70438
AAA70441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAA70434
AAA70435
                                                                                                                                                                                                                                        AAA51951
AAF75384
                                             AAA81468
                                                                                                                                                                                                                                                                                      AAA51953
                                                                                                                                                                                                                                                                                                                                               AAF89964
                                                                                                                                                                                                                                                                                                                                                                                                         AAA70430
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA70444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA70437
                                                                                                                                                                                                                                                                                                                                                               AAN50364
                                                                                                                                                                                                                                                                                                                                                                                          AAA70431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human polynucleotide SEQ ID NO 983.
                                                                                                                                                                                                                                                                      AAA51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAI58780 standard; cDNA; 772 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0662191.
2000US-0662191.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-DEC-2000; 2000WO-US34263.
   211221
                                                                                        2000US-0727344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                        349980
1437668
                                                                                                                                                                                                                          2352
2352
1950
2322
2541
2088
3465
                                                                                                                                                                                                                                                                                                                                             672
3642
1323
1387
                                                                                                                                                                                                                                                                                                                                                                                                         1453
1836
1836
1836
1944
1944
 WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-AUG-2000;
14-SEP-2000;
19-OCT-2000;
29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .eukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-JAN-2000;
25-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-JUL-2001
AA158780;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAI58780
 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human prostate tum
Human prostate-spe
Human prostate-spe
Prostate tumour an
Zea mays DNA fragm
                                                                                                                     (without alignments) 6024.527 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human secreted pro
3' cDNA sequence o
3' fragment of pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human immunogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  esults predicted by chance to have a to the score of the result being printed, of the total score distribution.
                                                                                                     February 12, 2002, 16:55:05; Search time 117.26 Seconds
                                                                                                                                                                                             eggetegageggetegageg.......89ggeaaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                               | SIDSZ/gcgdata/geneseqn/Nh1980.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1981.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1981.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1983.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1985.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1985.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1985.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1986.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1989.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1989.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1989.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1991.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1991.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1991.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1991.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1995.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1995.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1995.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh1999.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn/Nh2000.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human
                                                                                                                                                                                                                                                                                                    1861242
              GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of results predicted
                                                                                                                                                                                                                                                                                                   hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                      930621 segs, 428662619 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAI58780
AAI60566
AAC59553
AAV61275
AAV58509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAS10031
AAH93388
AAH84702
AAH02453
AAC43639
                                                                          - nucleic search, using sw model
                                                                                                                                                                                                                          IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of res
score greater than or equal to
and is derived by analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                               length: 0
length: 2000000000
                                                                                                                                                              us-09-525-867-9
824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    752
785
789
789
789
789
789
789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     991.1
8899.7
7.0
8446.7
7.0
7.0
7.0
7.0
7.0
946.7
7.0
946.7
7.0
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
946.7
966.7
966.7
966.7
966.7
966.7
966.7
966.7
966.7
966.7
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of
                                                                                                                                                                                                                                                                                                                               Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88466666666
                                                                                                                                                                                 score:
                                                                                                                                                                                                                          Scoring table:
```

```
Q
                                                                              δŽ
                                                                                                             qq
                                                                                                                                             ŏ
                                                                                                                                                                          g
                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                   The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM3642-AAM4213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system, such as peripheral nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's diseases, such as lateral solerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, and thrombolytic activity, chemotactic/chemokinetic activity, haemostatic assays for receptor activity, arthritis and therapy, drug screening, considers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  The sequence data for this patent did not form part of the printed
                                ä
                                  Wang
                                                                                                                                        Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
                                               ب
ز
                                Ren F,
Zhang J
                                Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 772 BP; 136 A; 265 C; 245 G; 126 T; 0 other;
                              Ma Y,
Xue AJ,
                                                               Drmanac RT;
                                                                                                                                                                                        Claim 1; SEQ ID NO 983; 10078pp; English.
                                              Xu C,
                            Asundi V, Che
Wehrman T, Xu
Goodrich R,
                                                                                            2001-442253/47
                           Liu C, P
Wang 2, W
Zhou P,
(HYSE-) HYSEQ INC
                                                                                                         P-PSDB; AAM39624
                                                           Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
```

```
Homo sapiens
                                                                                                           21-JAN-2000;
25-APR-2000;
                                                                                                                                    09-JUL-2000;
                                                                                                                                                                        14-SEP-2000;
19-OCT-2000;
                                                                                                                                                            03-AUG-2000;
                                                             26-JUL-2001
                                                                                                                                                                                                                                                             ρ,
Q, A,
                                                                                                                                                                                                                                               YT,
                                                                                                                                                                                                                                                                                                                                                                       Claim 1;
                                                                                                                                                                                                                                                  Tang
                                                                                                                                                                                                                                                             Wang
                          ö
                                                tggtctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggc 182
                                                                                                                       tggtctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggc 127
                                                                                                                                               242
                                                                                                                                                                    128 caccgatggcccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaa 187
                                                                                                                                                                                                302
                                                                                                                                                                                                                      247
                                                                                                                                                                                                                                               362
                                                                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                                                               422
                                                                                                                                                                                                                                                                                                                        367
                                                                                                                                                                                                                                                                                                                                               482
                                                                                                                                                                                                                                                                                                                                                                     427
                                                                                                                                                                                                                                                                                                                                                                                               542
                                                                                                                                                                                                                                                                                                                                                                                                                      487
                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                            cacegatggeceaageageaceceagectgecetgecaaaggeeagageegtggeteeeaa
                                                                                                                                                                                               acccagcagccgggggggatatgtggtggccaagctggatgacctcgtcaactgggcccg
                                                                                                                                                                                                            ccagiccgacgicatgatcgiggccggcactcaccaacaagatggccccagcgcttcg
                                                                                                                                                                                                                                                                                                                                                           caaggtctacgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaa
                                                                                                                                                                                                                                                                                                                                                                                                                      caaggtctacgaccagatgccggagccgcgctacgtggtctcccatggggagctgcgccaa
                                                                                                                                                                                                                                               catggcagcacccgctacgacatggaccgctttggcgtggtcttccgccgccgcg
                          ;
0
  DB 22; Length 772;
                         Indels
Score 750.8; DB 22
Pred. No. 1.8e-155;
0; Mismatches 7;
                       0;
 91.1%;
99.1%;
                         Conservative
           Similarity
              Local Sim
tes 755;
```

188

183

303

248 363 308 423 368 488

428 543

P ò

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42313) with nootropic, immunosuppressant and cytostatic activity. The polynuclectides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as
                                                                                                                                                                                                                                                                                                                                                     Human: nootropic; immunosuppressant; oytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sciencesis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                  722
                                                                                                      782
                         607
                                                                            667
                                                                                                                               cogcogcogcogcoggagoctgtcgccgtcctgtccccagcctgcttgtgtcccgtg 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    treating disorders
             gcagctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcg
                                                                 cogcogcogcogocogocoggagcctgtcogcogtcotgtcccagcctgcttgtgtcccgtg
  cgtggacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ren F, Wi
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qian XB,
Yang Y,
                                                                                                                                                                      for
                                                                                                                                                         Chen R, Ma Y, (
Xu C, Xue AJ,
,, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4555; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polypeptides, us
system injuries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chen R,
                                                                                                                                                                                                                                                                                                                                Human polynucleotide SEQ ID NO 4555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-05488725.
2000US-0552317.
2000US-0598042.
2000US-053450.
2000US-0653450.
2000US-0653450.
2000US-0653450.
2000US-0653450.
                                                                                                                                                                                                                                                AAI60566 standard; cDNA; 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Asundi V,
Wehrman T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel nucleic acids and such as central nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-442253/47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Liu C,
Wang 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; AAM41410.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                         leukaemia; ss
                                                                                                                                                                                                                                                                                                    22-OCT-2001
                                                                                                                                                                                                                                                                           AAI60566;
                                                  663
                                                                           809
                                                                                                                               899
                                                                                                                                                        783
603
                                                                                                    723
                                                                                                                                                                                                                       RESULT
AAI60566
ID AAI60
```

Best Loca Matches

63 ω 123 89

ò Dp à g οy g δý g à q ğ g ö d Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic; antidiabetic; antiinflammatoxy; antiuicer; vulnerary; anticonvulsant; antidererial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder; neurological disease; infection; human; secreted protein; ss.

2000WO-US06044

09-MAR-2000;

21-SEP-2000

WO200055352-A2 Homo sapiens,

Human secreted protein cDNA sequence #47

(first entry)

15-FEB-2001

```
ö
Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activin/Inhibin activity, chamotactic/chemokinetic activity, haemotactic/chemokinetic activity, arthritis and inflammation, leukaemias and Note: The sequence harm for the transfer of the sequence harm for the sequence harm for the transfer of the sequence harm for the sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cagogtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggccc 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          giggeeeaigacetteggeetggeetgetgegeegtggagatgatgeacaiggeageace 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            caagatggcggtgctgtcagctcctggcctgcgcggcttccggatccttggtctgcgctc 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtggcccatgaccttcggcctggcctgctgccgtggagatgatgcacatggcagcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cegeeggagectgtegeegteetgteeceagectgettgtgtgteecgtgaggttgteaata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 gggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                catgategtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cateceaggetgeecacetaeggeegaggeeetgetetaeggeateetgeagetgeagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caagatggcggtgctgtcagctcctggcctgcgcggcttccggatccttggtctgcgctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cagogtaggeccaggetgtacaggeacgaggtgtecateagagegtggecaecgatggeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aagcagcacccagccttgccaaaggccagagccgtggctcccaaacccagcagccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cegetacgacategacegetttggegtggtetteegegecagecegegecagteegacgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           catgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggaggcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccagatgccggagccgcgctacqtggtctccatggggagctgcgccaacggaggaggcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                            752;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                  C; 236 G; 126 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 738.8; DB 22;
Pred. No. 7.4e-153;
); Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aacctgccctcgggctgrcgccaaaaaaa 750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                795 aacctgccctcgggcaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                         89.7%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                  Sequence 752 BP; 130 A; 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 743; Conserv
                                                                                                                                                                                                                                                                                          specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
```

```
The invention relates to the isolation of genes AAC59507-C59556 encoding 50 human secreted proteins AAB34128-134264) The genes can be used to generate fusion proteins by linking to the gene for the human immunoglobulin G FC portion (AAC59498) for increasing the stability of the fusion protein as compared to the human protein only. The genes and proteins are useful for preventing, ameliorating or treating medical conditions, e.g. by protein or gene therapy. The genes are isolated from a range of human tissues disclosed in the specification. The nucleic acids, proteins, antibodies and (ant)agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast and other cancers of the adrenal gland, bone, bone marrow, breast, gastrointesinal tract, liver, lung, or urogenital; (b) immune disorders e.g. Addison's disease, allergies multiple sclerosis, rheumatoid arthritis and ulcerative colitis; (c) cardiovascular disorders such as myocardial ischaemias; (d) wound healing; (e) neurological diseases such as wyocardial ischaemias; and parasitic infections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ή.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel human secreted proteins useful for diagnosis, prevention and treatment of disorders including neurological, cell proliferative, cardiovascular, autoimmune and inflammatory disorders and microbial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tectggeetgegegtteeggateettggtetgegeteeagegtgggeeggetgtgea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 785 BP; 173 A; 255 C; 236 G; 121 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 715.4; DB 21;
Pred. No. 9.8e-148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 715.4;
                                                                                                                                                                                                                                                                                                                                                                       တ်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page 345; 383pp; English.
                                                                                                                                                                                                                                                                                                                                                                       Komatsoulis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86.8%;
                                                                                                                                                                                                                                                                                                                                         (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                               99US-0124099
99US-0168661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 2000-602124/57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAB34261
                                                                                                                                                                                                                                                                                                           03-DEC-1999;
                                                                                                                                                                                                                                                                                                12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Sim
Matches 727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     infections
                                                                                                                                                                                                                                                                                                                                                                      CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                       Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

AAC59553 standard; cDNA; 785

AAC59553 ID AAC5 RESULT

```
WPI; 1998-609886/51
 g
                                                                                                                                                                                             q
                                                                                                                                                                                                                                                   0.7
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                    ŏ
                                                                                                                            g
                                                                                                                                      QΥ
                                                                                                                                                            ŏ
                                                                                                                                                                      q
                                                                                                                                                                                    2
                                                                                                                                                                                                          9
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                          .6
                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                    22
                                                                                                                                                                                                                                                                                                                                                                            ď
275
           202
                      332
                                262
                                            395
                                                                 455
                                                                            382
                                                                                       515
                                                                                                  442
                                                                                                             575
                                                                                                                                    635
                                                                                                                                                         695
                                                                                                                                                                               755
                                                                                                                                                                                                     ctgtccccagcctgcttgtgtcccgtgaggttgtcaataaacctgccctcgggcaaaaa 815
                                                       322
                                                                                                                        502
                                                                                                                                              561
                                                                                                                                                                    621
                                                                                                                                                                                         681
                                                                                      ggtgaggggctgcgaccgcgtgcccgtggacatctacatcccaggctgcccacctac
                                                                                                                                                         gctgcagatctggtaccgcaggtagcgccgccgccgccgccggagcctgtcgccgtc
ggcctgctgcgccgtggagatgatgcacatggcagcaccccgctacgacatggaccgctt
                                                                 tggcgtggtcttccgcgccagcccgccagtccgacgtcatgatcgtggccggcacact
                                                                       ggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccaggctgccca-ctac
                                                                                                                                                                                          gctgcagatctggtaccgcaggtagcgccgccgccgccgccggagcctgtcgccgtc
           cgtggtctccatggggagctgcgaccaacggaggaggctactaccactattcctactcggt
                      gctggatgacctcgtcaactgggcccgccggagttctctgtggcccatgaccttcggcct
                                                                                                                                                                                                                                                                                                             Prostate; cancer; tumour; vaccine; immunogen; clone;
                                                                                                                                                                                                                                                                                                  prostate tumour clone J1-21
                                                                                                                                                                                                                                                                  ВР
                                                                                                                                                                                                                                                                  CDNA; 789
                                                                                                                                                                                                                                                                                                                                                                   98US-0020956.
97US-0806099.
97US-0904804.
                                                                                                                                                                                                                                                                                                                                                         98WO-US03492
                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                   cDNA sequence of
                                                                                                                                                                                                                                                                                       (first
                                                                                                                                                                                                                                                                                                                                                                                          CORP
                                                                                                                                                                                                                                                                 AAV61275 standard;
                                                                                                                                                                                                                            824
                                                                                                                                                                                                                                      750
                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                            aaaaaaaa
                                                                                                                                                                                                                                  (CORI-) CORIXA
                                                                                                                                                                                                                                                                                                                                                                                                     Хu
                                                                                                                                                                                                                                                                                                                        sapiens.
                                                                                                                                                                                                                                                                                                                                  WO9837093-A2
                                                                                                                                                                                                                                                                                                                                                                   09-FEB-1998;
25-FEB-1997;
01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                         25-FEB-1998;
                                                                                                                                                                                                                                                                                                                                              27-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                             AAV61275
                                                                                                                                                                                                                                                                                                                                                                                                     Dillon
                                                                                                                                                                                                                                                            AAV61275/c
                                                                                                                                                                                                                                                                                                                        Ното (
          143
                                                                                                                                                                                         622
                                                                                                                                                                                                                           816
216
                      576
                                203
                                           336
                                                      263
                                                                 396
                                                                            323
                                                                                                  383
                                                                                                             216
                                                                                                                        443
                                                                                                                                  576
                                                                                                                                              503
                                                                                                                                                                               969
                                                                                                                                                                                                     756
                                                                                                                                                                                                                682
                                                                                                                                                                                                                                      742
                                                                                       456
                                                                                                                                                                  Dp
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                  ò
          셤
                     ò
                               g
                                           ò
                                                     q
                                                                 δ
                                                                           g
                                                                                               qq
                                                                                                            QY
                                                                                                                      qq
                                                                                                                                ò
                                                                                                                                             g
                                                                                                                                                         δ
                                                                                                                                                                              ò
                                                                                                                                                                                         g
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                     g
                                                                                      QΥ
```

```
The present sequence is a DNA which encodes an immunogenic portion. of a prostate tumour protein. The encoded immunogen, or the DNA itself, can be used as a vaccine for the treatment of prostate cancer. The DNA was identified by analysis of a subtracted cDNA library obtained by subtracting a prostate tumour cDNA expression library with a normal tissue cDNA library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          440
                                                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtatgiggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATTIGGGGGCCAAGGGGGATGACTITGTIGAAACTGGGNCCCCCCGGAGNITITIGN 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTAANACCACTATTCCTAATNGGTGGTGGTGGGGGNTGCGACCGCATTGTGCCCGTGGAAA 263
                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acgicalgategicggcacacicaccaacaagatggccccagcgittegcaaggict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A-GINAIGATIGIGECNGONANANIAACCAAAAAAGAGGCCCCAGNG-ITIGCAAGGTIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGACCAGATGCCGGAGCCGCGANAAGTGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agaggaagatcaagcgggagcggaggtgcagatctggtaccgcaggtagcgccgccgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGGAANATCAAGCGGGAGCGGAGGCTGCANATTTGGTACCGCAGGTAGGGCCGCCGCC
des comprising immunogenic portions of prostate proteins vaccine for the treatment of prostate cancer % \left( 1\right) =\left\{ 1\right\} 
                                                                                                                                                                                                                                                                                                                                                                                   g----cccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      coccyctacgacatggaccgctttggcgtgg--tcttccgcgcccagcccgcgccagtccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acgaccagatgccggagccgctacgtggtctccatggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                           cacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGANCCANCTIGCCNNCCAAAGNNAGAGGCGTGGGTTCCCAAACCCAGNAANCGGGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     getactaceactatteetacteggtggtggtgggggetgcgaeegeatcgtgceegtggaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tetacateceaggetgeccacetacggecgaggecetgetetacggeatectgeagetge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TINAAAICCCAGGGIGCCCACCNANGGCCGAGGCCCTGTTTANGGCAICCTGCAGCTGC
                                                                                                                                                                                                                                                                                                                         13;
                                                                                                                                                                                                                                                                                   Length 789;
                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                            Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                   Score 384.6; DB 19;
Pred. No. 2.1e-75;
0; Mismatches 154;
                                                                                                                                                                                                                                                                                       DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aataaacctgccctcgggcaaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 12; Page 48; 130pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВР
                                                                                                                                                                                                                                                                                   46.7%;
ilarity 75.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA;
                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 527; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
AAV58509/c
ID AAV58509 standard;
    Polypeptides
                      Ø
                      in
                                                                                                                                                                                                                                                                                                                                                               141
                                                                                                                                                                                                                                                                                                                                                                                                 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      191
                      nseq
                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 551
```

ζ,

us-09-525-867-1.rag

```
9905-0130077-
9905-0130449-
9905-0130449-
9905-0131449-
9905-0131448-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131486-
9905-0131487-
9905-0131487-
9905-0141287-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      990S - 0142977.
990S - 0143542.
990S - 0144005.
990S - 0144085.
990S - 0144086.
990S - 0144335.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0144333
                                                                                                                                                                                                                                                                                                                                                                              25-MAY-1999;
27-MAY-1999;
28-MAY-1999;
01-JUN-1999;
04-JUN-1999;
07-JUN-1999;
08-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-JUN-1999;
10-JUN-1999;
14-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-JUN-1999;
16-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71 VNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKM 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 58.3%; Score 652; DB 21; Length 143; Best Local Similarity 80.4%; Pred. No. 4.6e-65; Matches 115; Conservative 13; Mismatches 15; Indels and the statement of the st
                                                                                                                                                                                                                                                                                                                                                                                                                                               15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana protein fragment SEQ ID NO: 33133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAG28058 standard; Protein; 132 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191 LYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    990S-0121825.
990S-012316.
990S-0125788.
990S-0125788.
990S-0126785.
990S-0127465.
990S-012814.
990S-0159331.
990S-0159637.
990S-0159638.
990S-0159584.
990S-0160767.
990S-0160767.
990S-0160814.
990S-0160818.
990S-0160818.
990S-0160818.
990S-0161360.
990S-0161360.
990S-0161363.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-MAR-1999;
01-APR-1999;
06-APR-1999;
08-APR-1999;
16-APR-1999;
14-0CT-19999
14-0CT-19999
18-0CT-19999
21-0CT-19999
21-0CT-19999
22-0CT-19999
22-0CT-19999
22-0CT-19999
25-0CT-19999
26-0CT-19999
26-0CT-19999
26-0CT-19999
26-0CT-19999
26-0CT-19999
26-0CT-19999
28-0CT-19999
28-0CT-19999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAG28058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
```

```
PR 20-70L-1999 990S-0144335.

PR 20-70L-1999 990S-01444352.

PR 21-70L-1999 990S-0144632.

PR 21-70L-1999 990S-0144632.

PR 22-70L-1999 990S-0144632.

PR 22-70L-1999 990S-014508.

PR 22-70L-1999 990S-014508.

PR 22-70L-1999 990S-015508.

PR 22-70L-1999 990S-016508.

PR 22-70L-
```

```
MIFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQM 141
                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                              Query Match 53.8%; Score 602; DB 21; Length 132; Best Local Similarity 81.8%; Pred. No. 1.7e-59; Matches 108; Conservative 11; Mismatches 13; Indels
                                                                                                                                                                                                                                                                                                                                                                                              Search completed: February 12, 2002, 20:37:07 Job time: 2457 sec
      990S - 0159331
990S - 0159331
990S - 0159534
990S - 0159534
990S - 016076
990S - 016076
990S - 016076
990S - 016098
990S - 016098
990S - 016098
990S - 016136
99US-0159330.
                                                                                                                                                                                                             99US-0162142
                                                                                                                                                                                                                                                                                                                                                          nrrkdflhwwnk 132
                                                                                                                                                                                                                                                                                                                                          202 KRERRLQIWYRR 213
       14-0CT-1999;
14-0CT-1999;
14-0CT-1999;
18-0CT-1999;
21-0CT-1999;
21-0CT-1999;
                                                                    21-071-1999
22-071-1999
22-071-1999
22-071-1999
22-071-1999
25-071-1999
25-071-1999
26-071-1999
26-071-1999
26-071-1999
26-071-1999
                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                  82
g
                                                                                                                                                                                                                                                                                                       δ
```

ö

```
Zea mays DNA fragin
Peppermint plant o
Human cDNA clone (
CDNA sequence of t
Maize ferulate-5-h
Muze ferulate-5-h
Human cDNA sequenc
Human CDNA sequenc
Human Actuvin rece
Human Artuvin rece
Human Transforming
Partial coding reg
Rat pan-s/tk recep
Plant microsatelli
Human breast and o
Human brain cell s
Leub subunit of 3-
Wycobacterium tube
                                                                                                                                                                                                                                                                            Human secreted pro
Zea mays DNA fragm
Plant microsatelli
Plant microsatelli
Zea mays DNA fragm
Rice glutaredoxin
                                                                                                                                                                                                                                                                                                                                                                                       CDNA encoding the Zea mays DNA fragm CDNA encoding the Zea mays DNA fragm Zea mays DNA fragm Zea mays DNA fragm
                                                                                                                                                                                                                                                   Chromatin regulato
Nucleotide sequenc
                                                                                                                                                                                                                                                                                                                                                              Zea mays DNA fragm
Zea mays DNA fragm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human, nootropic, immunosuppressant, cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; hamenington's disease; hamenington's amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALIGNMENTS
                                                                                                                                                                              AAH14977
AAH18635
                                                                                                                                                                                                          AAQ66638
AAZ09845
AAZ48863
                                                                                                                                                                                                                                                                                                                                                                                                     AAC39822
AAV38429
                                                                                                                                                                                                                                                                AAH28355
                                                                                                                                                                                                                                                                                                                                                                                           AAV38430
                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC40956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human polynucleotide SEQ ID NO 983.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAI58780 standard; cDNA; 772 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0653132.
2000US-0653450.
2000US-0662191.
2000US-06631936.
 26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0727344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
\alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
14-SEP-2000;
19-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-JUL-2001
 AAI58780;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
AAI58780
 0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (without alignments)
6905.533 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human polynucleoti
Human secreted pro
Human gene signatu
3' cDNA sequence o
3' fragment of pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunogenic
Human prostate tum
Human prostate-spe
Human prostate-spe
Prostate tumour an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                 February 12, 2002, 17:47:55 ; Search time 102.3 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                                                                                                                                                                                                                                                                           ". SIDSZ/gcgdata/geneseq/geneseqn.NA1980.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1981.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1981.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1983.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1985.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1985.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1985.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1985.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1980.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1980.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1980.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1981.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1991.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1991.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1991.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn.NA1995.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1995.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1995.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1995.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1996.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
SIDSZ/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                       1861242
           GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                930621 seqs, 428662619 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                 - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA158780
AA160566
AAC59553
AAT24101
AAV61275
AAV58509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAS10031
AAH93388
AAH84702
AAH02453
                                                                                                                                                                                                       OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              772
752
752
785
1117
789
789
789
789
789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.000
7.0017
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0014
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq
Maximum DB seq
                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             747
593
700
700
700
700
700
700
700
                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                            Word size :
                                                                 OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                  Database :
                                                                                                                                                                              Sednence:
                                                                                                                                                                                                                                                Searched:
                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10087654321
```

cgtggacatctacatcccaggctgcccacctacggccgaggcctgctctacggcatcct

603

(HYSE-) HYSEQ INC

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM3642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system, such as peripheral nervous system is a service of the invention of a disease. Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, and Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic assays for receiver activity, arthritis and therapy, drug screening, assays for receiver activity, arthritis and inflammation, leukaemias and constructions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The sequence data for this patent did not form part of the printed
                                       Ö,
                                       Wang
                                                                                                                                                                     for treating disorders
                                       Ren F, W
Zhang J;
                                       Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 772 BP; 136 A; 265 C; 245 G; 126 T; 0 other;
                                       Ma Y,
Xue AJ,
                                                                                                                                                                 Novel nucleic acids and polypeptides, useful such as central nervous system injuries
                                                         Xu C, Xue AJ
Drmanac RT;
                                                                                                                                                                                                                         Claim 1; SEQ ID NO 983; 10078pp; English
                                       Chen R,
                                     Asundi V, Che
Wehrman T, Xu
Goodrich R,
                                                                                                           WPI; 2001-442253/47.
P-PSDB; AAM39624.
                                   Liu C, A
Wang 2, W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            specification
                                                       Wang J, 1
Zhao QA,
                                       ΥΤ,
                                       Tang
```

Gaps .. Length 772; Indels Score 747; DB 22; Pred. No. 5.6e-290; ö Pred. No. 5.6 Mismatches 0; 1larity 100.0%;
Conservative 0 90.78; Similarity 747; Query Match Best Local Matches 74

```
ö
                                                                                                     242
                                                                                                                                             302
                                                                                                                                                                  247
                                                                                                                                                                                      362
                                                                                                                                                                                                                               422
                                                                                                                                                                                                                                                                       482
                                                                                                                                                                                                                                                                                                                542
                                                                                                                                                                                                                                                                                                                                                        602
                 63 gaaggccgaggccaagatggcggtgctgtcagctcctggcctgcgcggcttccggatcct 122
                                                            tggtctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggc 182
                                                                                                                        187
                                                                                                                                                                                                          307
                                                                                                                                                                                                                                                   367
                                                                                                                                                                                                                                                                                           427
                                                                                                                                                                                                                                                                                                                                   487
                                                                                                                                                                                                                                                                                                                                                                             547
                                                                              tggtctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggc 127
                                      67
                                                                                                                                                                                                                                                                                                              acccagcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccg
                                                                                                                                                                                                 caccgatggcccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaa
                                                                                                                                                                 acccagcagccggggggggtatgtggtggccaagctggatgacctcgtcaactgggcccg
                                                                                                                                                                                                                                                                       ccagiccgacgicatgatcgiggccggcacactcaccaacaagatggccccagcgcticg
                                                                                                                                                                                                                                                                                          ccagtccgacgtcatgatcgtggccggcacactcaccaacaagatggccccagcgttcg
                                                                                                                                                                                                                                                                                                                                                         cggaggaggctactactattcctactcggtggtgaggggctgcgaccgcatcgtgcc
                                                                                                                                                                                      ccggagttctctgtggcccatgaccttcggcctggctgctgcgccgtggagatgatgca
                                                                                                                                                                                                                               catggcagcacccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcg
                                     ω
                                                         123
                                                                              68
                                                                                                                                                                                                                              363
                                                                                                                                                                188
                                                                                                                                                                                     303
                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                  308
                                                                                                                                                                                                                                                                      423
                                                                                                                                                                                                                                                                                          368
                                                                                                                                                                                                                                                                                                                                   428
                                                                                                   183
                                                                                                                                            243
                                                                                                                                                                                                                                                                                                               183
                                                                                                                                                                                                                                                                                                                                                        543
                                                         δX
                                                                             g
                                                                                                                    a
                                                                                                                                                                                                      qq
                                                                                                                                                                                                                            Óγ
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                 a
                  ò
                                    g
                                                                                                   ò
                                                                                                                                           \delta
                                                                                                                                                            d
                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                        ò
```

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM36642-AAM42213) with noctropic, immunosuppressant and cytostatic activity. The polynuclectides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                              722
                                                    667
                                                                                                    727
                                                                                                                                                                                                                                                                                                              Human, nootropic; immunosuppressant; cytostatic; gene therapy; cancer peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-brager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             useful for treating disorders
                                                                           cgtggacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcct
                                        gcagctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ren F, Wang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chen R, · Ma Y, (
Xu C, Xue AJ,
l, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 4555; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel nucleic acids and polypeptides, us
such as central nervous system injuries
                                                                                                                                                   aggttgtcaataaacctgccctcgggc 754
                                                                                                                                                                                                                                                                                         NO 4555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chen
                                                                                                                             aggttgtcaataaacctgccctcgggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Asundi V, Che
Wehrman T, Xu
Goodrich R,
                                                                                                                                                                                                                 ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0552317.
2000US-0552317.
2000US-059042.
2000US-0653450.
2000US-0653450.
2000US-0653450.
2000US-0653036.
                                                                                                                                                                                                                                                                                       Human polynucleotide SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000WO-US34263
                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-442253/47.
                                                                                                                                                                                                               AAI50566 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Liu C, Wang Z, Szhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAM41410
                                                                                                                                                                                                                                                                                                                                                                                                                           WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                             leukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-APR-2000;
09-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14-SEP-2000;
                                                                                                                                                                                                                                                               22-0CT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tang YT,
Wang J, 1
Zhao QA,
                                                                                                                                                                                                                                        AA160566;
   548
                                                    809
                                                                           723
                                                                                                    668
                                                                                                                            783
                           663
                                                                                                                                                                                                   AAI60566
ID AAI6
                                                                                                                                                                                                                            g
                           QΣ
                                                QQ
                                                                                                 g
                                                                                                                          δŽ
                                                                           Qγ
```

```
0;
Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activit/inhibin activity, Chemotactic/Chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                                                     314
                                                                                                                                                                                                                                                                                                                                                                                                                     374
                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                 1 caagatgggggtgctgtcagctcctggcctgcgggcttccggatccttggtcttgcgctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75 caagatggcggtgctgtcagctcctggcctgcgggcttccggatccttggtctgcgctc
                                                                                                                                                                                                                                                                    cagogtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggccc
                                                                                                                                                                                                                                                                                 gtggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                             gtggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggaggcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocgcoggagoctgtcgccgtcctgtccccagcctgcttgtgtcccgtgaggttgtcaata
                                                                                                                                                                                                                                                                                                                    aagcagcacccagcctgcccaaaggccagagccgtggctcccaaacccagcagccg
                                                                                                                                                                                                                                                                                                                                                                    999cgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccgctacgacatggaccgctttggcgtggtcttccgcgcccagcccgcgccagtccgacgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    catgatogtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggaggcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctaccactattcctactcggtggtgggggctgcgaccgcatcgtgcccgtggacatcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cateceaggetgeceaectaeggeegaggeeetgetetaeggeateetgeagetgeagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gaagatcaagcggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccgcc
                                                                                                                                                                                           ;
0
                                                                                                                                                                  Length 752;
                                                                                                                                                                                           Indels
                                                                                                                            G; 126 T; 0 other;
                                                                                                                                                                DB 22; L
3.5e-285;
                                                                                                                                                                                           Mismatches
                                                                                                                                                                Score 735;
Pred. No.
                                                                                                                            236
                                                                                                                                                       89.2%; Scc.
100.0%; Pre
0;
                                                                                                                            Sequence 752 BP; 130 A; 260 C;
                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       aacctgccctcgggc 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aacctgccctcgggc 735
                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                   specification
                                                                                                                                                                            Best Local Simi
Matches 735;
                                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                  195
                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                   315
                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      795
                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
  ŏ
                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
```

ВР.

AAC59553 standard; cDNA; 785

m

RESULT AAC59553 ID AAC5

```
The invention relates to the isolation of genes AACS9507-C59556 encoding of muman secreted proteins AAB34218-B31264) The genes can be used to generate fusion proteins AAB34218-B31264) The genes can be used to immunoglobulin G Pc portion (AACS9496) for increasing the stability of the fusion protein only inches and protein only. The genes and protein are useful for preventing, ameliorating or treating medical conditions, e.g. by protein or gene therapy. The genes are isolated from a range of human itssues disclosed in the specification. The nucleic acids, proteins, antibodies and (antigaonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast and other cancers of the adrenal gland, bone, bone marrow, breast, gastrointestinal tract, liver, lung, or urogenital: (b) immune disorders e.g. Addison's disease, allergies, autoimmune harmonythic anamenia, autoimmune thypoiditis, diaberes mellitus, crohn's disease, multiple sclerosis, rheumatoid arthritis and ulcerative colitis; (c) cardiovascular disorders such as myocardial ischaemias; (d) wound healing; (e) infectious diseases such as viral, bacterial, fungal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ij
                                                                                                                Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antialergic; hepatotropic; antidabetic; antiinflammatory; antiulcer; vulnerary; anticonvulsant; antiacterial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder; neurological disease; infection; human; secreted protein; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tectggeetgegeggetteeggateettggtetgegeteeagegtgggeeeggetgtgea 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 treatment of disorders including neurological, cell proliferative, cardiovascular, autoimmune and inflammatory disorders and microbial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel human secreted proteins useful for diagnosis, prevention and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23 tectggeetgegeggetteeggateettggtetgegeteeagegtgggeeeggetgtgea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggcacgaggtgtccatcagagcgtggccaccgatggccaagcagcacccagcctgccct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 785 BP; 173 A; 255 C; 236 G; 121 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; DB 21;
5.9e-228;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                 Human secreted protein cDNA sequence #47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 592;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                               .
Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Page 345; 383pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Komatsoulis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71.88;
99.98;
                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                       09-MAR-2000; 2000WO-US06044.
                                                                                                                                                                                                                                                                                                                                                         99US-0124099.
99US-0168661.
                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000-602124/57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; AAB34261
                                                                                                                                                                                                                                                     WO200055352-A2
                                                                                                                                                                                                                      sapiens.
                                                                                                                                                                                                                                                                                                                                                         12-MAR-1999;
03-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Simi
                                               15-FEB-2001
                                                                                                                                                                                                                                                                                        21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  infections
                                                                                                                                                                                                                                                                                                                                                                                                                                             Rosen CA,
              AAC59553,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                    Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
```

```
275
                                           335
                                                               262
                                                                                    395
                                                                                                        322
                                                                                                                          tggcgtggtcttccgcgccagcccgcgccagtccgacgtcatgatcgtggccggcacact 455
                                                                                                                                                  382
                                                                                                                                                                    515
                                                                                                                                                                            575
                                                                                                                                                                                                                                  502
                                                                                                                                                                                                                                                                                               695
                                                                                                                                                                                                                                                       ggtgaggggtgcgaccgcatcgtgcccgtggacatctacatcccaggctgcccacctac 635
                                                                                                                                                                                                                                                                          561
                                                                                                                                                                                                                                                                                                         755
                                                                                                                                                                                                                                                                                                                                                  Gene signature; messenger RNA; mRNA; relative abundance; frequency; human; cloning; mapping; non-biased library; diagnosis; detection; cell typing; abnormal cell function; ss.
 GCCaaaggcCagagCcgtggctcCcaaacccagcagccggggcgagtatgtggtggccaa
                                                    ggcctgctgcgcgtggagatgatgcacatggcagcacccgctacgacatggaccgctt
                                                                                              tggcgtggtcttccgcgccagcccgcgccagtccgacgtcatgatcgtggcggcacact
                                                                                                                                                                  Caccaacaagatggcccagcgcttcgcaagttctacgaccagatgccggagccgcgta
                                                                                                                                                                                                                         gotgoagatotggtacogoaggtagogocgcogocgcogocggoggagootgtcgcogtc
                     gccaaaggccagagccgtggctcccaaaacccagcagccggggcgagtatgtggtggccaa
                                                                                                                                                                                                             ogiggiciccaiggggageigegeeaaeggaggaggeiaciaceaciaticeiaeieggi
                                                                                                                                                                                                                                                                          99tgagggggtgggacgcatcgtgcccgtggacatctacatcccaggctgccca-ctac
                                                                                                                                                                                                                                                                                               ggccgaggccctgctctacggcatcctgcagctgcagaggaagatcaagcgggagcggag
                                         gctggatgacctcgtcaactgggcccgccggagttctctgtggcccatgaccttcggcct
                                                                                                                                                                                                                                                                                                                                                                                ctgtccccagcctgcttgtgtcccgtgaggttgtcaataaacctgccctcggg 808
                                                                                                                                                                                                                                                                                                                                                                                           Identifying gene signatures in 3'-directed human cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT24101 standard; cDNA to mRNA; 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human gene signature HUMGS06091.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93JP-0355504,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94WO-JP01916.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Okubo K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MATS/) MATSUBARA K. (OKUB/) OKUBO K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1995-206931/27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matsubara K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W09514772-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-NOV-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-SEP-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAT24101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                             203
                                                                                                     263
                                                                                                                          396
                                                                                                                                                                                       383
                                                                                                                                                                                                                                                                                                                  562
516
                    143
                                        276
                                                                                 336
                                                                                                                                              323
                                                                                                                                                                  456
                                                                                                                                                                                                             516
                                                                                                                                                                                                                                443
                                                                                                                                                                                                                                                     576
                                                                                                                                                                                                                                                                         503
                                                                                                                                                                                                                                                                                                                                      969
                                                                                                                                                                                                                                                                                                                                                                              756
                                                                                                                                                                                                                                                                                                                                                                                                  682
                                                                                                                                                                                                                                                                                                                                                                                                                                          AAT24101
ID AAT2
                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
δ
                    g
                                        ò
                                                           g
                                                                                 δy
                                                                                                   g
                                                                                                                          ŏ
                                                                                                                                           .
С
                                                                                                                                                                  \delta
                                                                                                                                                                                      g
                                                                                                                                                                                                           δ
                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Óλ
                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
A single-stranded DNA (or its complementary strand or the corresp. Couble-stranded DNA) which comprises one of the 7837 "GS" sequences given in AAT19001-T26873 and which is able to hybridise to part of human genomic DNA, DDNA or mRNA is claimed. The GS (Gene Signature) sequences were obtained from 3'-directed cDNA libraries prepared from various human tissues; synthesis of CDNA was initiated from the 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-end of mRNA hybridise with specific mRNAs pecies, almost all the 3'-oriented so as to reflect accurately the relative abundance of different mRNAs in the particular tissue from which it was derived. The appearance frequency of a given GS in a cDNA library can be determined (esp. using primers and probes derived from the GS sequences) as a means of diagnosing abnormal cell function or for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is a DNA which encodes an immunogen, or the DNA itself, of a prostate tumour protein. The encoded immunogen, or the DNA itself, can be used as a vaccine for the treatment of prostate cancer. The DNA was identified by analysis of a subtracted cDNA library obtained by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Polypeptides comprising immunogenic portions of prostate proteins used in a vaccine for the treatment of prostate cancer
for diagnosis of abnormal cell function, by preparing cDNA that reflects relative abundance of corresp. mRNA in specific human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prostate; cancer; tumour; vaccine; immunogen; clone;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        770 cttgtgtcccgtgaggttgtcaataacctgccctcgggc 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68 cttgtgtcccgtgaggttgtcaataaacctgccctcgggc 107
                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 117 BP; 15 A; 43 C; 34 G; 23 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 16; L
5.6e-0,7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3' cDNA sequence of prostate tumour clone J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.9%; Score 40; DB
larity 100.0%; Pred. No. 5.6
Conservative 0; Mismatches
                                                                         Page 1530; 2245pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 12; Page 48; 130pp; English.
                                                                                                                                                                                                                                                                                                                                                                                  recognising different cell types.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
tes 40; Conserv
                                                                         Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

ö

us-09-525-867-9.rng

BP

(first entry)

```
Human immunogenic prostate tumour protein cDNA sequence SEQ ID NO:32.
                                                                                                                                                                                                                                         Human; prostate cancer; diagnosis; tumour; gene therapy; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New polypeptide useful for treating and diagnosing prostate cancer comprises an immunogenic portion of prostate tumor protein .
                                                                                                                                                                                                                                                               immunogenic; cytostatic; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 50; Page 110; 263pp; English.
                             AAA06272/c
ID AAA06272 standard; cDNA; 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dillon DC, Harlocker SL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-171268/15.
                                                                                                                                                                                                                                                                                                                                                       WO200004149-A2.
                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                              13-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-JAN-1999;
09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-JUL-1998;
23-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                   27-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-SEP-1998
                                                                                               AAA06272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
Matches 2
       RESULT
                                                                                               ò
                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This sequence represents a human prostate tunnour specific gene, and can be used in the method of the invention. The method is for detecting prostate cancer comprises contacting a blotogical sample with an agent able to bind an immunogenic portion of a prostate protein (such as encoded by this sequence). An antibody which binds to an immunogenic portion of the prostate protein, and the method can be used to detect, monitor progression of, or treat prostate cancers. The antibody may also be conjugated to a therapeutic agent for use in therapy of prostate
                                                                                                                                                                                        Gaps
Subtracting a prostate tumour cDNA expression library with a normal tissue cDNA library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prostate tumour specific gene; human; prostate cancer; detection;
                                                                                                                                                                                        .
0
                                                                                                                                       3.3%; Score 27; DB 19; Length 789; llarity 100.0%; Pred. No. 0.071; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel human prostate specific tumour protein and fragments
                                                                  Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3' fragment of prostate tumour specific gene J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for detecting and treating prostate cancers
                                                                                                                                                                                                                            722 geogeogeogeogeoggageotgt 748
                                                                                                                                                                                                                                                        151 GCCGCCGCCGCCGCCGGAGCCTGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 50; 141pp; English.
                                                                                                                                                                                                                                                                                                                                                                                            AAV58509 standard; cDNA; 789 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0904809.
97US-0806596.
97US-0904809.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98WO-US03690.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1998-480805/41.
                                                                                                                                    Query Match
Best Local Similarity
Matches 27; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dillon DC, Xu J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9837418-A2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAV58509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancers
                                                                                                                                                                                                                                                                                                                                             AAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS8509/CAAVS85
SSXS
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                               ò
```

Mitcham JL;

Xu J,

Yuqin J,

98US-0115453. 98US-0116134. 98US-0159812. 98US-0159822.

99WO-US15838

99US-0232149.

99US-0288946

```
ó
The present invention describes isolated polypeptides, comprising an immunogenic portion of a prostate tumour protein (PPP). The polypeptides and polymicleotides encoding them have cytostatic activity and can be used in vaccines and in gene therapy. The polypeptides and polymucleotides encoding them, antigen presenting cells which express the polypeptides, antibodies against the polypeptides and vaccines comprising them can be used for inhibiting the development of prostate cancer in a patient. The polypeptides can be used to generate antibodies or anti-idictypic antibodies for passive immuno therapy. A portion of the polypeptides can be used as a probe or to modulate the expression of the polypeptides. AAA06241 to AAA06541 to AAX82000 to AAX82000 to AAX82000 represent sequences used in the exemplification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.3%; Score 27; DB 21; Length 789; 100.0%; Pred. No. 0.071; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          722 gccgccgccgccgccggagcctgt 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   151 GCCGCCGCCGCCGCCGGAGCCTGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAS10031/c
ID AAS10031 standard; cDNA; 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 100.
27; Conservative
                                                                                                                                                                                                                                                                                                                                                                          invention.
                                                                                                                                                                                                                                                                                                                                                                          the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS10031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NX AX ED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
```

ô

Gaps

ö

Score 27; DB 19; Length 789; Pred. No. 0.071; 0; Mismatches 0; Indels

3.3%; Sccilarity 100.0%; Pr Conservative 0;

Query Match Best Local Similarity Matches 27; Conserv?

722 geegeegeegeegeegeeggageetgt 748

ŏ Dp

```
The present invention describes polynucleotide sequences (I) which encode prostate-specific proteins (II). (I) and (II) have cytostatic activity, and can be used in vaccine production and gene therapy. (I), (II), antibodies to (II), fusion proteins comprising (II), and isolated (II), and isolated (II) and the antibodies are also used in the detection of cancer in a patient. (I) and the antibodies are also used in the detection of cancer in a patient. (I) and the antibodies or so that is diagnosed or treated is particularly prostate cancer. (I) and (II) can be used for monitoring the progression of cancer in a patient. (I) and (II) can also be used to improve diagnostic and therapeutic methods for prostate cancer. They can indicate the level of metastasis as well as the prostate volume. Adapting the level of metastasis as well as the prostate volume. Adapting sequences used in the exemplification of the present invention.
                                                                     New polynucleotide encoding a prostate-specific protein, for diagnosing, monitoring and treating prostate cancer in a patient and for use in vaccines -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 27; DB 22;
Pred. No. 0.071;
                                                                                                                                                                Claim 1; Page 240; 543pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xu J, Dillon DC, Mitcham JL, F
Kalos MD, Retter MW, Stolk JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH84702 standard; cDNA; 789 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.3%; 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0439313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-NOV-2000; 2000WO-US30904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 3.3'
Best Local Similarity 100.
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-308785/32.
                        WPI; 2001-425873/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200134802-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAH84702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
AAH84702/c
       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The sequence is a human prostate tumour cDNA which encodes a partial tumour protein. The DNA is useful for inhibiting the development of prostate cancer or for treating prostate cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel polynucleotide encoding polypeptide comprising a portion of prostate tumour protein useful for inhibiting development of prostate cancer or for treating prostate cancer in a patient
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Harlocker SL, Jiang Y, Reed SG;
Retter MW, Stolk JA, Skeiky YAW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; prostate cancer; prostate-specific; diagnosis; vaccine; cytostatic; gene therapy; metastasis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 3.3%; Score 27; DB 22; Length 789; Best Local Similarity 100.0%; Pred. No. 0.071; Matches 27; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                Human; prostate tumour protein; prostate cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human prostate-specific 3' cDNA sequence J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Column 54-5; 105pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   722 gccgccgccgccgccggagcctgt 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151 GCGCCGCCGCCGCCGGAGCCTGT 125
                      Human prostate tumour cDNA J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAH93388 standard; cDNA; 789 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Xu J, Dillon DC, Mitcham JL,
Kalos MD, Fanger GR, Day CH,
Wang A, Meagher MJ;
                                                                                                                                                                                                                                                                                              97US-0806099.
97US-0904804.
98US-0020956.
                                                                                                                                                                                                                                                    98US-0030607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-JAN-2001; 2001WO-US01574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-JAN-2000; 2000US-0483672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-440862/47.
                                                                                                                                                                                                                                                                                                                                                                                            (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Dillon DC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200151633-A2.
                                                                                                                                                         US6262245-B1.
                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                       01-AUG-1997;
09-FEB-1998;
                                                                                                                                                                                                                                                  25-FEB-1998;
                                                                                                                                                                                                                                                                                                 25-FEB-1997;
                                                                                                                                                                                                        17-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-0CT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAH93388;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH93388/c
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE STATE OF THE S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

ö

Length 789;

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Isolated polypeptide comprising at least an immunogenic portion of prostate-specific protein, useful in the diagnosis and therapy of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Harlocker SL, Jiang Y, Reed SG;
Day CH, Skeiky YAW, Wang A;
·.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human, prostate cancer, therapy, diagnosis, cat eye syndrome, chromosome 22q11.2; prostate-specific protein; chromosome 1, prostate specific antigen; PSA; ss.
0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                        Human prostate-specific 3' cDNA sequence J1-21
Mismatches
                                                   722 gaageegaagaagaagaat 748
                                                                                 Claim 31; Page 140; 325pp; English.
```

Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;

. . . × 03

Query Match

```
ö
               The present invention describes an isolated polypeptide (P1) comprising at least an immunogenic portion of a prostate-specific protein, or its variant. Also described are polynuclectides (N1) encoding (P1). (P1) and (N1) have cytostatic activity and can be used in vaccine production. The polypeptides, nucleic actions and antibodies from the present invention are useful in the diagnosis and therapy of prostate cancer. Prostate specific genes P704P, P712P, P774P, P775P and B305D are located in a genomic region on chromosome 22411.2 known as the Cat Eye Syndrome region. Prostate specific antigen (PSA) P501S was located on chromosome 21. AH84671 to AAB85143 and AAG99000 to AAG99077 represent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention describes an isolated polypeptide (I) comprising at least an immunogenic portion of a prostate tumour antigen protein or its variant. (I) have extostatic activity and can be used in vaccine production. (I), prostate tumour antigen polynucleotides, an antigen presenting cell (APC e.g. a dendritic cell) that expresses (I), and a pharmaceutical composition containing (I) are useful for inhibiting the prevelopment of cancer in a patient. Antibodies specific for prostate specific proteins and oligonucleotides that hybridise to a polynucleotide that encodes a prostate specific protein are useful for detecting the presence or absence of a cancer or monitoring the progression the progression of a cancer, especially prostate cancer. AAH02422 to AAH2872, AAB7498 to AAB74821 and AAB34830 are sequences used in the exemplification of the present invention.
                                                                                                                                                                                                              polynucleoride and polypeptide sequences used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prostate specific protein and its encoding polynucleotide, useful for the treatment and diagnosis of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; prostate tumour antigen; prostate tumour; therapy; diagnosis; prostate cancer; immunogenic; cytostatic; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Prostate tumour antigen determined 3' cDNA sequence for J1-21.
                                                                                                                                                                                                                                                                                                                                                        Query Match 3.3%; Score 27; DB 22; Length 789; Best Local Similarity 100.0%; Pred. No. 0.071; Matches 27; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                            Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cheever MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                            722 gccgccgccgccgccggagcctgt 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151 GCGCCGCCGCCGCCGGAGCCTGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 50; Page 132; 276pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xu J, Skeiky YAW, Reed SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAH02453/c
ID AAH02453 standard; cDNA; 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-OCT-2000; 2000WO-US27464.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0157455,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-245062/25.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200125272-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAH02453;
                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
```

```
ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present DNA sequence is the partial coding region of human latent Transforming 'Growth Factor (76F) beta binding protein. Obtained by fragmentation of YAC clones, using the vector pDVCGG. The CCG repeats could be isolated from equally sized fragmented YACs. The regions of recombination contain one or a few CG/YCG repeats, but are located in the GC rich region. The fragmentation vectors can be used for producing deletion fragments of YACs. The vectors can be used for producing of at least a part of the human genomic sequences present in the YACs. New markers from the chromosomes of the human genome can be isolated and positional information of isolated sequences can be provided, for use in
                                                                                                                                                                                                                                                                                                             Fragmentation vector; target sequence; triplet repeat region; yeast; lysine-2 gene; selectable marker; Yeast Artificial Chromosome; YAC; telomere; homologous recombination; deletion fragment; contig mapping positional information; GCG repeat; human; Transforming growth factor; Fragmented YAC set; pDVCGG vector; latent TGF-beta binding protein; ds.
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= c
/note= "Sequence obtained after end rescue of the
fragmented YACs"
                                    0
                                                                                                                                                                                                                                                                                Partial coding region of human latent TGF-beta binding protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fragmentation vector for producing deletion fragments of yeast artificial chromosomes for genome mapping
3.3%; Score 27; DB 22; Length 789; 100.0%; Pred. No. 0.071; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (VLAA-) VLAAMS INTERUNIVERSITAIR INST BIOTECHNOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= a
/rpt_type= TANDEM
/note= "7 CCG triplet repeat"
301.303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= b
/label= Triplet_repeat
322..498
                                                                   722 geogeogeogeogeoggageotgt 748
                                                                                                151 GCGGCGCGCGCGCGGAGCCTGT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers 301..321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Del-Favero J, Van Broeckhoven C;
                                                                                                                                                                                 AAZ49556 standard; DNA; 1038 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example; Fig 7; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-EP04106.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98EP-0201976
                                                                                                                                                                                                                                                 (first entry)
                                  27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-116773/10.
               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-JUN-1998;
                                                                                                                                                                                                                                                 30-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A09966059-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_unit
                                                                                                                                                                                                                AAZ49556;
                                  Matches
                                                                                                                                                                AA249556
                                                                                                                                                  RESULT
                                                                   δ
                                                                                              g
```

```
Matches
                              ò
                                                  a
                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to isolated and/or recombinant pancreatic serine/
threonine kinase receptor (pan-s/tk) polypeptides. Sequences of rat and
thuman pan-s/tk polypeptides and nucleic acids encoding them are provided.

Nost cells cells containing vectors comprising the pan-s/tk genes are
used for the recombinant expression of the proteins. The pan-s/tk

Survival in an animal cell. The polynucleotides are also useful for
survival in an animal cell. The polynucleotides are also useful for
detecting pan-s/tk ligand on cells in samples and for gene therapy.

Ligands identified, together with soluble polypeptides, are useful for
coreening test compounds that modulate the bioactivity of a pan-s/tk
receptor. The discovery of this new class of pan-s/tk polypeptides
provides an alternative method of mediating cell proliferation.

Differentiation and survival in animals. The polypeptides also represent
the first identified specific requireces of pancreatic development. The
presents sequence represents a cDNA encoding a rat pan-s/tk receptor
                                                                                         ó
                                                                                                                                                                                                                                                                                                 Pancreatic serine/threonine kinase receptor; pan-s/tk; cell growth; differentiation; gene therapy; ligand; screening; cell proliferation; regulator; pancreatic; ds.
                                                                                         Gaps
                                                                                      ö
                                                              Length 1038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New pancreatic serine/threonine kinase (pan-s/tk) receptor polypeptides - useful for modulating cell proliferation, differentiation and survival in animals
                                                                                      0; Indels
                       Sequence 1038 BP; 191 A; 351 C; 323 G; 173 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1989 BP; 512 A; 492 C; 576 G; 409 T; 0 other;
                                                                                                                                                                                                                                                                          Rat pan-s/tk receptor polypeptide encoding cDNA.
                                                             3.3%; Score 27; DB 21;
100.0%; Pred. No. 0.069;
tive 0; Mismatches 0
                                                                                                           721 egecgeegeegeegeegeetg 747
                                                                                                                          302 cgccgccgccgccgccggcggagcctg 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 28; Page 61-63; 77pp; English.
 contig mapping using these vectors.
                                                                                                                                                                                              AAX26147 standard; cDNA; 1989
                                                                                                                                                                                                                                                                                                                                                                                                                           98WO-US16640.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pang K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     97US-0909354
                                                                                                                                                                                                                                                  (first entry)
                                                                         Best Local Similarity 100. Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ONTO-) ONTOGENY INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Barker DD, Miac N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1999-167430/14.
P-PSDB; AAY01495.
                                                                                                                                                                                                                                                                                                                                                                          W09907854-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                             11-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-AUG-1997;
                                                                                                                                                                                                                                                  21-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                   18-FEB-1999
                                                                                                                                                                                                                                                                                                                                                  Rattus sp.
                                                                                                                                                                                                                         AAX26147;
                                                             Query Match
                                                                                                                                                                                       AAX26147
S X S
                                                                                                             οy
                                                                                                                                   qq
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences AAA31040-A32093 represent novel plant microsatellite sequences and associated flanking species. The sequences comprise a central core repeat sequence, especially selected from the sequences AAA32094-A32096 with left and right flanking sequences. The polyucibeotide sequences can be used in the detection of DNA polymorphisms, in genome mapping, in physical mapping, in positional cloning of genes, in variety in positional cloning of genes, in variety between plant tissues, populations, cultivars, species and species groups. They may also be used to design hybridization probes for oligonucleotide fingerprinting and library screening and to design primers for microsatellite-primed PCR. Microsatellite markers are useful to locate specific economically useful genes in plant genomes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plant microsatellite sequence, core repeat sequence, detection, probe, DNA polymorphism; genome mapping; physical mapping; fingerprinting; variety identification; genetic variability evaluation; primer; ss.
        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New plant microsatellite markers and associated flanking species for
the detection of polymorphic genetic markers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
        ..
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.0%; Score 25; DB 21; Length 381; 00.0%; Pred. No. 0.49;
        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 381 BP; 56 A; 122 C; 141 G; 61 T; 1 other;
        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GENE-) GENESIS RES & DEV CORP LTD & FLETCHER (FLET-) FLETCHER CHALLENGE FORESTS LTD.
        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                        721 egeegeegeegeegeegeetg 747
                                                                                                              103 GGCGCGCGCGCGCGGAGCCTG 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 368; 392pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   270 GGCGGCGCGCGCGCGGAAGCC 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721 egecgeegeegeegeegagee 745
                                                                                                                                                                                                                                                                                                                                                                                                                     Plant microsatellite marker #996.
     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match 3.0%; Somest Local Similarity 100.0%; P. Matches 25; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAF21665 standard; DNA; 1780 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bloksberg LN,
                                                                                                                                                                                                                      AAA32035/c
ID AAA32035 standard; DNA; 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0105307
                                                                                                                                                                                                                                                                                                                                                                  (first entry)
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-116958/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Havukkala IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9967421-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                               05-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-JUN-1999;
  27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-DEC-1999
                                                                                                                                                                                                                                                                                                          AAA32035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
AAF21665
ID AAF2:
XX
AC AAF2:
```

AAF21665;

Length 1989;

DB 20; 0.063;

3.3%; Score 27; 100.0%; Pred. No.

Best Local Similarity

Query Match

```
proteins AAF21614 - AAF22031 represent DNA sequences encoding human proteins AAB58711 - AAB59128. The DNA and protein sequences are associated with breast and ovarian cancer. Included in the invention are sequences AAF22032 - AAF22040 and AAB59129 which are used in the twention are equences AAF22040 and AAB59129 which are used in the from the breast and ovarian cancer associated DNA, protein, agonist or antagonist sequences exhibit cytostatic; immunosuppressive; nortropic; neuroprotective, antivital, antiallergic; hepatotropic; notifidabetic; antiinflammatory; antiallergic; hepatotropic; antidabetic; antiinflammatory; antiallergic; hepatotropic; antidabetic; antiinflammatory; antiallergic; hepatotropic; antibacterial; antiparasitic and cardiant activity. The polynucleotide and protein sequences are used in the diagnosis of cancer, particularly breast and ovarian cancer. The nucleic acid sequences, proteins, agonists and agonists may also be used in the diagnosis, prevention and treatment of immune disorders e.g. Addison's disease, allergies, autoimmune haemolytic anaemia, autoimmune thyroiditis, diabetes mellitus, Crohn's disease, multiple sclerosis, rheumatoid anyocardial ischeemias, wound healing; neurological disorders such as myocardial anoxia and epilepsy; and infectious diseases.
                                                                                                                                nootropic; neurpprotective; antiviral; antiallergic; hepatofropic; antidiabetic; antinflammatory; antiulcer; vulnerary; anticonvulsant; antibacterial; antifungal; antiparasitic; cardiant; immune disorder; Addison's disease; allergy; autoimmune haemolytic anaemia; autoimmune thyroiditis; diabetes mellitus; Crohn's disease; multiple sclerosis; rheumatoid arthritis; ulcerative colitis; cardiovascular disorder; wound healing; neurological disease; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New human breast and ovarian cancer associated gene sequences and the
                                                                                                               Human; breast cancer; ovarian cancer; cytostatic; immunosuppressive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polypeptides encoded by these genes, useful in the prevention, treatment and diagnosis of cancer, immune disorders, cardiovascular disorders and neurological diseases
                                                                 Human breast and ovarian cancer associated antigen gene SEQ ID 52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1780 BP; 436 A; 440 C; 394 G; 505 T; 5 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page 518; 1299pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        990S-0124270.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-MAR-2000; 2000WO-US05881.
                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rosen CA, Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-611515/58.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; AAB58762.
                                                                                                                                                                                                                                                                                                                                                                WO200055173-A1.
                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-MAR-1999;
                   27-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                              21-SEP-2000.
```

Gaps .; 0 2.9%; Score 24; DB 21; Length 1780; 100.0%; Pred. No. 1; of Mismatches 0; Indels Query Match Best Local Similarity 100.0 Matches 24; Conservative

ó

721 cgccgccgccgccgccggagc 744

ò g

2 egeogeogeogeogeogage 25

Search completed: February 12, 2002, 19:56:04 Job time: 7689 sec

us-09-525-867-9.rni

```
739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCGAAGGG 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 384.6; DB 4; Length 7
Pred. No. 5.2e-79;
0; Mismatches 154; Indels
                                                                                                                                                                                                                                                                                                                      Sequence 32. Application US/09020956
Fatent No. 6261562
GENERAL INFORMATION:
GENERAL INFORMATION:
TILLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY OF PROF.
NUMBER OF SEQUENCES: 178
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
STATE: WA
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CIP: 98109

COMPUTER READABLE FORM:
MEDIUW TYPE: Floppy disk
COMPUTER: IBM PC COMPAtible
COMPOTER: IBM PC COMPATIBLE
COMPOTER: IBM PC COMPATIBLE
COMPOTER: DATEMIN RC-DOS/MS-DOS
SOFTWARE: PATEMIN RC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/020,956
FILING DATE: 09-FEB-1998
ATTORNEY/AGENT INFORMATION:
NAME: MAXI, DAVIG J.
REGISTRATION NUMBER: 31,392
REFERENCE/POCKET NUMBER: 210121.427C2
FELERAX: (206) 622-4900
TELEFAX: (206) 622-4900
TELEFAX: (206) 622-4900
TELEFAX: (206) 622-6031
INFORMATION FOR SEQ ID NO: 32:
SEQUENCE CHARACTERISTICS:
FRAGTH. 789 base pairs
US-08-520-519-6
US-09-105-537-3
US-08-205-537-3
US-08-205-5389-1
US-08-430-02389-1
US-08-930-001-1
US-08-930-001-1
US-08-930-001-1
US-08-930-001-1
US-08-930-001-1
US-08-930-001-1
US-08-128-767-14
US-08-128-767-14
US-08-128-767-14
US-09-103-840A-2
US-08-825-586-46-1
US-09-103-840A-1
US-08-92-586-46-1
US-08-92-586-46-1
                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46.78;
75.98;
 13613 4
13613 4
1312 3
20235 5
2400 4
1511 3
16511 3
16511 3
1651 4
2634 4
440374 1
2634 1
2634 1
2634 1
2634 4
49960 3
864 4 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 789 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 75.9
Matches 527; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear MOLECULE TYPE: CDNA
    7777777700000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                 RESULT 1
US-09-020-956-32/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-020-956-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141
  Sequence 32, Appl
Sequence 32, Appl
Sequence 12, Appli
Sequence 11, Appli
Sequence 13, Appli
Sequence 13, Appl
Sequence 13, Appli
Sequence 2, Appli
Sequence 3, Appli
                                                                                   February 12, 2002, 17:22:17; Search time 42.4 Seconds (without alignments) 4401.365 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                   1 cggctcgagcggctcgagcg.......8gggcaaaaaaaaaaaaa 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2
Sequence 3
Sequence 3
Sequence 5
Sequence 1
Sequence 1
Sequence 1
Sequence 1
Sequence 1
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence Sequence Sequence 4 Sequence 4 Sequence 4 Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                    /cgc2_6/ptodata/2/ina/5A_COMB.seg:*
/cgn2_6/ptodata/2/ina/5B_COMB.seg:*
/cgn2_6/ptodata/2/ina/6B_COMB.seg:*
/cgn2_6/ptodata/2/ina/6B_COMB.seg:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seg:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seg:*
             GenCore version 4.5
(c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-593-589-3
US-08-804-439A-13
US-08-804-439A-13
US-08-951-715A-2
US-08-459-595A-2
US-08-459-595A-2
US-08-459-595A-2
US-09-105-537-32
US-09-105-537-5
US-09-105-537-5
US-09-105-537-5
US-09-105-537-5
US-09-105-537-5
US-08-476-519-10
US-08-476-519-10
US-08-476-519-10
US-08-476-519-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-020-956-32
US-09-030-607-32
US-09-103-840A-2
4 US-09-103-840A-1
5244792-2
                                                                                                                                                                                                                                                        hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-134-012-5
US-08-520-519-5
US-08-134-012-4
US-08-520-519-4
US-08-134-012-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-105-537-21
                                                                                                                                                                                                                                 351203 seqs, 113238999 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                             nucleic search, using sw model
                                                                                                                                                                                          IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                                                                          Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4403765 4
                                                                                                                                       US-09-525-867-9
824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Copyright
                                                                                                                                                                                                                                                           ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                            Scoring table:
                                                             OM nucleic -
                                                                                                                                                                                                                                                        Total number
                                                                                                                                                                    Seguence:
                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                       on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0
                                                                                       Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  υυ
```

PROSTATE CANCER AND METHOD

13;

Appli Appli Appl

Sequence 1,

3, Appli 1, Appli 3, Appli 1, Appli 1, Appli 14, Appli 10, Appli 10, Appli 10, Appli 11, Appli 10, Appli

Sequence 1, Application of the property of the

7;

260

430

203

```
739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCCGAAGGG 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtatgtggtggccaagctggatgacctcgt.--caactgggcccgccggagttctctgtg 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619 GGATTTGGGGGCCCAAGGGGGATGACTTTGTTGAAACTGGGNCCCCCGGGAGNTTTTTTGN 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acgicaigategiggeeggeacacteaceaacaagaiggeeeeagegtiegeaaggiet 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          totacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctgc 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            671 agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgcc 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201 cacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagccggggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                     141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              679 GGANCCANCTTGCCNNCCAAAGNNAGAGGCGTGGGTTCCCAAACCCAGNAANCGGGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g----cccatgaccttcggcctggctgctgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    coccgctacgacatggaccgctttggcgtgg--tcttccgcgccagcccagtccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     551 gctactaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262 TINAAATCCCAGGGTGCCCACCNANGGCCGAGGCCCTGTTTTANGGCATCCTGCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       731 geogeogooggageetgtegeegteetgteeecageetgettgtgteeegtgaggttgte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142 GCGCCGCCGGAGCCTGTTGCCGTCCTGTCCCAGCCTGNTTGTGTCCCGNGAGGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                        13;
                                                                                                                                                                                                                                                                                                                                        Length 789;
                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                        Score 384.6; DB 4;
Pred. No. 5.2e-79;
0; Mismatches 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      791 aataaacctgccctcgggcaaaaaaaaaaa 824
          210121,427C3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/09103840A, Patent No. 6294328
CENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D.
  REFERENCE/DOCKET NUMBER: 2101
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 682-4900
TELEPAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 32:
SEQUENCE CHARACTERISTICS:
LENGTH: 789 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 75.9%;
Matches 527; Conservative
                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                  TOPOLOGY: lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-103-840A-2
                                                                                                                                                                                                                                           ; MOLECULE TY
US-09-030-607-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ο̈́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΩŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 32, Application US/09030607
Patent No. 6262245
GENERAL INFORMATION:
APPLICANT: Xu, Jiangchun
APPLICANT: Dillon, Davin C
TITLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY OF PROSTATE CANCER AND METHODS INVINER OF SEQUENCES: 224
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                         372
                                                                                                                                                                                                                                         500
                                                                                                                                                                                                                                                                                         430
                                                                                                                                                                                                                                                                                                                                      440
                                                                                                                                                                                                                                                                                                                                                                                   490
                                                                                                                                                                                                                                                                                                                                                                                                                                382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGATTTGGGGGCCCAAGGGGGATCACTTGTTGAAACTGGGNCCCCCCGGAGNTTTTTGN
                                                                                                                                                                                    g----cccatgaccttcggcctggcctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                       ccccgctacgacatggaccgctttggggtgg..tcttccggggccagccgggccagtccg
                                                                                                                                                                                                                                                                                                               acyteatgategtggeeggcacaeteaeeaagaeggeeeeagegettegeaaggtet
                                                                                                                                                                                                                                                                                                                                                                                                          A-GTNATGATTGTGGCNGGNANANTAACCAAAAAGGGGCCCCAGNG-TTTGCAAGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABGACCAGATGCCGGAGCCGCGANAAGTGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gctactaccactattcctactcggtggtggggctgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262 TINBAATCCCAGGGTGCCCACCNANGGCCGAGGCCCTGTTTTANGGCATCCTGCAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtatgtggtggccaagctggatgacctcgt...caactgggcccgccggagttctctgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acgaccagatgccggagccgcgtacgtggtctccatggggagctgcgacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     totacatoccaggetgeccacetacggecgaggecetgetetacggeateetgeagetge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:

LONG BULLATION NUMBER: US/09/030,607

FILING DATE: 25-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aataaacctgccctcgggcaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATAAACCTGCCCTNGGNAAAAAAAAAAAA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 6300 Columbia Center, CITY: Seattle STATE: WA COUNTY: USA LIP: 98104 COMPUTER READABLE FORM: MEDIUM TYPE: Ploppy disk COMPUTER: IBM PC COMPUTER: OF SYSTEM: PC-DOS/MS-DG OPERATING SYSTEM: PC-DOS/MS-DG OF SYSTEM: PC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 2: CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-030-607-32/c
                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                       261
                                                                                                                                                                                    318
                                                                                                                                                                                                                                                                                                                                                                                                                              439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322
                                                                                                                                                                                                                                                                                 373
                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                              131
                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
ö
                                          a
                                                                                       ò
                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5244792-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 3507785 ggagccgaaatgggttctggccatggtgtgtgcgcctcgtcaggtgggatgttcaacaa 3507844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 3507485 gcctgacgtgggattgaggtagggcgtgggactggaagaacagctgcccggcgggatcct 3507544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db 3507545 gctgtcgaccgtcgagaaggtggcgggctatgtccgcaaaaactccctgtggccggcaac 3507604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db 3507725 ggcgggccgggtcagccagaagatggcgccggtactgcgccagatctatgaccagatggc 3507784
                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: CDC 1551
OTHER INFORMATION: "n" bases at various positions throughout the sequence OTHER INFORMATION: represent a, t, c or g
02-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  267 ggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtgggcccatgac 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207 gcctgccctgccaaaggccagagccgtggctcccaaacccagcagccggggcgagtatgt 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             327 cttcggcctggcctgctgcgccgtggagatgatgcacatggcagcaccccgctacgacat 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      387 ggaccgctttggcgtgg---tcttccgccagcccgcccagtccgacgtcatgatcgt 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    444 ggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgcc 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 624 ctgcccacctacggccgaggccctgctctacggcatcctgcagctgcagaggaagatcaa 683
APPLICANT: WHITE, Owen R.
APPLICANT: FRASER, Claire M.
APPLICANT: PRASER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT PELLING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTMARE: PATENTIN VET. 2.1
SEQ ID NO 2
LENGTH: 4403765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
APPLICANT: FRASER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: TUBERCULOSIS
TITLE OF INVENTION: TUBERCULOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            504 ggagccgcgtactacgtggtctccatggggagctgcgccaacggaggaggctactaccacta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        564 ttoctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 4403765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ώ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 89.6; DB 4; Length 4 Pred. No. 2.4e-11; 0; Mismatches 190; Indels
                                                                                                                                                                                                                                                                                      TYPE: DNA ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/09103840A Patent No. 6294328 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 10.9%;
Best Local Similarity 59.8%;
Matches 292; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db 3507962 gcagatgc 3507969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              684 gcgggagc 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
```

```
444 ggocggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgcc 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3512349 ggagccgaaatgggttctggccatgggtgtgtgtgcgcctcgtcaggtgggatgttcaacaa 3512408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db 3512049 gcctgacgtgggattgaaggtagggcgtgggactggaagaacagctgcccggcgggatcct 3512108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 3512466 ctgcccgccgccgcgagagatgctgctgcacgcaatcctgaagctgcacgaaaagattca 3512525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3512109 gctgtcgaccgtcgagaaggtggcgggctatgtccgcaaaaactccctgtggccggcaac 3512168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gcctgcctgccaaaggccagagccgtggctcccaaacccagcagccggggcgagtatgt 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               267 ggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtggcccatgac 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             327 cttcggcctggcctgctgcgccgtggagatgatgcacatggcagcagcaccgctacgacat 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              387 ggaccgctttggcgtgg---tcttccgcgcccagcccagtccgacgtcatgatcgt 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             504 ggagccgcgctacgtggtctccatggggagctgcgccaacggaggaggctactaccacta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             564 ttoctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctgoccacctacggccgaggccctgctctacggcatcctgcagctgcagaggaagatcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                       Length 4411529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
5244792-2
; PACHI NO. 5244792
APPLICANT: BURKE, RAE L.; PACHL, CAROL; VALENZUELA, PABLO D.T.
TITLE OF INVENTION: EXPRESSION OF RECOMBINANT GLYOPROTEIN
B FROM HERPES SIMPLEX VIRUS
NUMBER OF SEQUENCES: 19
                                                                                                                                                                                                                                                                                                                                                                                    Score 88; DB 4; 1
Pred. No. 5.4e-11;
0; Mismatches 190
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/587,179
FILING DATE: 20'SEP-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 921,730
FILING DATE: 20'COT-1986
APPLICATION NUMBER: 597,784
FILING DATE: 06'APR-1984
                                                                                                                                                                       ; LENGTH: 4411529
; TYPE: DNA
; ORGANISM: Mycobacterium tuberculosis
; OTHER INFORMATION: H37Rv
US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 59.8%;
Matches 292; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db 3512526 gcagatgc 3512533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            684 gcgggagc 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO:2:
LENGTH: 3472
```

us-09-525-867-9.rni

```
980 gctacggctgcgcggccgccggctacctggacggcaggctggagcccctgtacgagcgcg 1039
                   446 coggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                            -gogotacgtggtotocatgggggagctgcgaccaacggaggagggctactaccact
                                                                                                                                                                                              623 gotgoccacctacggccgaggccctgctctacggcatcctgcagcagctgcagaggaagatca
                                                                                                                 860 aggocaaggoggoogtgggcoccacgggoggoggoggoggoggogactttgactaccogg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      247 agcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccggcgg
                                                                                                                                                     563 attectacteggtggtggtggggetgegacgeategtgeeegtggaeateteaeateeeag
                                                                                                                                                                                                                                                                                                                                                            1040 teggggegeegegetgeggeegetggtgateaageaggageeeege 1086
                                                                                                                                                                                                                                                                                                                     683 agcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgc 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B OF THE RFHV/KSHV HERPES VIRUSES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/804,439A
FILING DATE: February 21, 1997
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 44.4; DB 3;
Pred. No. 0.11;
); Mismatches 251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Ste 1400
CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38,347
3ER: 09176/004001
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 13, Application US/08804439A, Patent No. 6015565
GAPERAL INFORMATION:
APPLICANT: Rose, Timothy M. APPLICANT: Strand, Marnix L. APPLICANT: Strand, Marnix L. TITLE OF INVENTION: GLYCOPROTEIN B C TITLE OF INVENTION: SUBFAMILY OF HER UNWERR OF SEQUENCES: 113
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: H8116., 11sa A.
REGISTRATION NUMBER: 0917
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 678-5070
TELEPHONE: (619) 678-5099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 5.4%;
Best Local Similarity 43.7%;
Matches 195; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
LENGTH: 2713 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92037
                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-804-439A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -08-804-439A-13
                                                                          506 agcc--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: CA
                                g
                                                                                                            g
                                                                                                                                                                                         QQ
                                                                        Ω
                                                                                                                                                     ŏ
                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                     ŏ
                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1356 ttcaccgtggcctgggactgggtgccaaagcgcccgtcggtctgcaccatgaccaagtgg 1415
                                                                                                                                                                                                             1176 gogactggogactttgtgtgtacatgtccccgttttacggctaccgggaggggtcgcacacc 1235
                                                                                                                                                                                                                                                                               1116 aactgcatcgtcgaggaggtggacgcgctcggtgtacccgtacgacgagttttgtgctg 1175
                                                                                                                                                                                                                                                                                                                                                                           ctcaccaccaaggcccgggccacggccgaccacccggaacctgctcacgacccccaag 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caggaggtggacgagatgctgcgctccgagtacggcggctccttccgattctcctccgac 1475
                                                                                                                                                                        agttetetgtggeecatgacetteggeetggeetgegeegtggagatgatgeacatg 366
                                                                                         247 agcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccgg 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggaggetactaccactatteetacteggtggtgaggggetgegaeegeategtgeeegtg 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               326 cetteggeetggeetgetgegeegtggagatgatgeacatggeageecegetacgaca 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    386 tggaccgctttggcgtggtcttccgcgcccagcccgcgccagtccgacgtcattgtgg 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         740 agccgctggggcggcatctgcgagcacgagacgtccatcgacatcagcgcctacatcgacc 799
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3. Application US/09593589
Sequence 3. Application US/09593589
Batent NO. 6306655
GENERAL INFORMATION:
APPLICANT: Brett P. Monia
APPLICANT: Madeline Wyatt
TITLE OF INVENTION: ANTISENSE MODULATION OF C/EBP ALPHA EXPRESSION
FILE REPERENCE: FXS-0119
CURRENT APPLICATION NUMBER: US/09/593,589
CURRENT FILING DATE: 2000-06-13
NUMBER OF SEQ ID NOS: 94
                                                                                                                                                                                                                                                         gcagcaccccgctacgacatggaccgctttggcgtggtcttccgcgcccagcccgcgccag
                                                                                                                                                                                                                                                                                                                                                                                                                 gtctacgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacgga
                                                                                                                                                                                                                                                                                                                                  427 tecgaegicatgategiggeeggeacaeteaceaacaagatggeeceagegettegeaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcag
                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 45.4; DB 4; Length 3318;
Pred. No. 0.067;
0; Mismatches 216; Indels 3
          DB 6; Length 3472; 0.049;
                                                     Indels
                                                   250;
            Score 46; DB 6
Pred. No. 0.049
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1536 ggggactgcatcggcaaggacgcccg 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          667 ctgcagaggaagatcaagcgggagcg 692
            5.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 5.5%;
Best Local Similarity 46.2%;
Matches 188; Conservative
                                Similarity 43.9 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: CDS
; LOCATION: (592)...(1668)
US-09-593-589-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3318
                                Best Local Sim
Matches 196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -09-593-589-3
              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1416
                                                                                                                                                                                                                                                                                            1236
                                                                                                                                                                                                                                                                                                                                                                        1296
                                                                                                                                                                        307
                                                                                                                                                                                                                                                     367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            547
                                                                                                                                                                                                                                                                                                                                                                                                               487
                                                                                           δ
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pp
                                                                                                                                                                      ò
                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

ö

S

```
Launis,
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hawthorne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Koziel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
US-07-951-715A-2
                                               195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  607
                                               Matches
                                                                                                                                PP
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                      985 CTCACCACCAAGGCCCGGGCCACGGCGCCGACCACCGGAACCTGCTCACGACCCCCAAG 1044
                                                                                                                                                                                                                                                                                                               1045 TTCACCGTGGCCTGGGACTGGGTGCCAAAGCGCCCGTCGGTCTGCACCATGACCAAGTGG 1104
                                                                                                                                                                                                                                                                                                                                                                                                    1105 CAGGAGGIGGACGAGAIGCIGGGCICCGAGIACGGCGGCICCTICCGATICICCICCGAC 1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1165 eccamarccaccaccurcaccaccaecreaces as a su a su su su su se escencia escencia de su su su su su su su su s
                                                                                                                                                                                                                                                                    487 gtctacgaccagatgccggagccgcgttacgtggtctccatggggagctgcgccaacgga 546
                                                                                                                                                                                                                                                                                                                                                          547 ggaggetactaccactattectacteggtggtgaggggetgegacgeategtgeeegtg 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                    gacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcag 666
307 agttetetgtggeecatgaeetteggeetggeetgetgegeegtggagatgatgeaeatg 366
                                                                                     gcagcaccccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcgccag 426
                                                                                                                                427 tecgaegteatgategtggeeggeacaeteaceaacaagatggeeecagegettegeaag 486
                                          865 GCGACTGGCGACTTTGTGTACATGTCCCCGTTTTACGGCTACCGGGAGGGGTCGCACACAC 924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible '
COMPUTER: IBM PC compatible '
COMPUTER: IBM PC compatible '
COMPUTER: PatentIn PC-DOS/MS-DOS
SOFTWMRE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: 26-SEP-1996
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Rose, Timothy M.
APPLICANT: Bosch, Marnix L.
APPLICANT: Bosch, Marnix L.
APPLICANT: Strand, Kurt
TITLE OF INVENTION: GLYCOPROTEIN B OF THE RPHV/KS:
TITLE OF INVENTION: SUBFAMILY OF HERPES VIRUSES
NUMBER OF SEQUENCES: 100
CORRESPONDENCE ADDRESS:
ADDRESSEE: MOTISON & FOSETSET
STREET: 755 page Mill Road
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY AGENT INFORMATION:
NAME: Schiff, J. Michael
REGISTRATION NUMBER: 40,253
REFERENCE/DOCKET NUMBER: 29938-20002.00
TELECOMUNICATION INFORMATION:
TELEPHONE: (415) 813-5600
TELEPHONE: (415) 494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1225 GGGGACTGCATCGGCAAGGACGCCCG 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          667 ctgcagaggaagatcaagcgggagcg 692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 13, Application US/08720229
Patent No. 6022542
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEX: 706141
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            i: 2713 base pairs
nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TOPOLOGY:
US-08-720-229-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-720-229-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: 1
STATE:
                                                                                        367
                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                    õ
```

```
;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 985 CTCACCACCACCAGGCCCGGGCCACGGCGCCGACCACCGGAACCTGCTCACGACCCCCAAG 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1045 TTCACCGTGGCCTGGGACTGGGTGCCAAAGCGCCCGTCGGTCTGCACCATGACCAGTGG 1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1105 CAGGAGGTGGACGAGATGCTGCGCTCCGAGTACGGCGGCTCCTTCCGATTCTCCTCCGAC 1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1165 GCCATATCCACCACCATCACCACCTGACCTGACCGAGTACCCGCTCTCGCGGGTGGACCTG 1224
                                                                                                                                                                                                                                      307 agttetetgtgggeceatgacetteggeetggeetgetgegeegtggagatgatgeacatg 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      427 tecgaegteatgategtggeeggeacaeteaceaacaagatggeeceagegettegeaag 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            487 gictacgaccagaigccggagccgcgctacgiggictcccaiggggagctgcgaccgacgga 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            547 ggaggetactaccactattectacteggtggtgaggggetgegacgeategtgeeegtg 606
                                                                                                                                                                                                                                                                                                                                                         367 gcagcaccccgctacgacatggaccgctttggcgtggtcttccgcgcgccagcccgcgccag 426
                                                                                                                   247 agcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccgg 306
                                                                                                                                                                           805 AACTGCATCGTCGAGGAGGTGGACGCGCGCTCGGTGTACCCGTACGACGAGTTTGTGCTG 864
                                                                                                                                                                                                                                                                                           865 GCGACTGGCGACTTTGTGTACATGTCCCCGTTTTACGGCTACCGGGAGGGGTCGCACACAC 924
                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gacatctacaggotgoccacctacggccgaggccctgctctacggcatcctgcag
                                                                 ;
0
      Length 2713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Pace, Gary M.
APPLICANT: Suttie, Janet L.
TITLE OF INVENTION: SYMPHETIC DNA SEQUENCE HAVING ENHANCED
TITLE OF INVENTION: INSECTICIDAL ACTIVITY IN MAIZE
NUMBER OF SEQUENCES: 94
CORRESPONDENCE ADDRESS:
Score 44.4; DB 3; Length 2
Pred. No. 0.11;
0; Mismatches 251; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1225 GGGGACTGCATCGCCAAGGACGCCCG 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CIBA-GEIGY Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/07951715A Patent No. 5625136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rothstein, Steven J.
Bowman, Cindy G.
Dawson, John L.
Dunder, Erik M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   667 ctgcagaggaagatcaagcgggagcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Evola, Stephen V.
Crossland, Lyle D.
Wright, Martha S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Michael G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gregory W.
   5.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Desai, Nalini M.
Lewis, Kelly S.
Kramer, Vance C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ellis J.
Karen L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Skyline Drive
                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Warren,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Merlin,
```

```
266 tggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtgggcccatga 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product= "Full-length pure maize optimized synthetic Bt" /note= "Disclosed in Figure 3 as synlT.mze"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Page, Gary M.
APPLICANT: Suttie, Janet L.
TITLE OF INVENTION: SYNTHETIC DNA SEQUENCE HAVING ENHANCED TITLE OF INVENTION: INBECTICIDAL ACTIVITY IN MAIZE NUMBER OF SEQUENCES: 94
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.3%; Score 43.8; DB 2; Length 3:
44.7%; Pred. No. 0.15;
ive 0; Mismatches 262; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: NO. 5859336artis Corporation STREET: Patent & Trademark Dept., 520 White Plains STREET: Rd., POB 2005 CITY: Tarrytown STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/459,448A
FILING DATE: 02-7UN-1995
CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/951,715
FILING DATE: 25-5EP-1992
FILING DATE: 04-0CT-1991
ATTORNEY/AGENT INFORMATION:
NAME: PACE AND MANATION NUMBER: US 07/772,027
FILING DATE: 04-0CT-1991
ATTORNEY/AGENT INFORMATION:
NAME: PACE AND MANATION NUMBER: 40403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGC 1577/CIP/DIV4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /desc = "Synthetic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
CMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                          Rothstein, Steven J.
Bowman, Cindy G.
Dawson, John L.
Dunder, Erik M.
Pace, Gary M.
                                                                             Desai, Nalini M.
Lewis, Kelly S.
Kramer, Vance C.
Warren, Gregory W.
Evola, Stephen V.
                                                                                                                                                                                                                                           Crossland, Lyle D. Wright, Martha S. Merlin, Ellis J. Launis, Karen L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: CG
TELECOMMUNICATION INFORMATION:
TELEPHONE: (919)541-8682
TELEFAX: (919)541-8689
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                 Michael G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: other nucleic
DESCRIPTION: /desc = "Synth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3468 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 44.7'
Matches 214; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
ZIP: 10591-9005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-459-448A-2
                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1049 regrececcasereseccasses are are accepted as a regrece resecution and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regresses and a regresses and a regresses are a regressed and a regresses and a regresses are a regresses and a regresses and a regresses are a regressed and a regresses and a regresses are a regresses and a regresses and a regresses are a regressed and a regresses and a regresses are a regressed and a regresses and a regresses are a regressed and a regressed and a regresses are a regressed and a regressed and a regresses are a regressed and a re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1109 CCTTCAACATCGGCATCAACAACCAGCAGCTGAGCGTGCTGGAGGGCACCGAGTTCGCCT 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1229 TGGACGAGATCCCCCCCAGAACAACAACGTGCCCCC---CGCCAGGGCTTCAGCCACC 1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1346 GCGCCCCCATGTTCAGCTGGATCCACGCAGCGCCGAGTTCAACAACATCATCCCCAGCA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1169 ACGGCACCAGCAACCTGCCCAGCGCCGTGTACCGCAAGAGCGGCACCGTGGACAGCC 1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1406 GCCAGATCACCCCAGATCCCCCTGACCAAGAGCACCAACCTGGGCAGCGGCACCAGGGGTGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 266 tggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtgggcccatga 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  386 tggaccgctttggcgtggtcttccgcgcccagcccagtccgacgtcatgatcgtgg 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     566 octactoggtggtgaggggctgcgacgcatcgtgcccgtggacatctacatcccaggct 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       626 goccacotacggoccgaggocctgototacggoatcotgoagotgoagaggaagatcaago 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccttcggcctggcctgcgccgtggagatgatgcacatggcagcaccccgctacgaca 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       446 ccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      506 agccgcgctacgtggtctccatggggagctgcgccaacggaggaggtactaccactatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product= "Full-length pure maize optimized synthetic Bt" /note= "Disclosed in Figure 3 as synlT.mze"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 3468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.3%; Score 43.8; DB 1; Length 3.44.7%; Pred. No. 0.15;
tive 0; Mismatches 262; Indels
                                                                                FILING PARE: 2-38F 1322

CLASSIFICATION: 800

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/772,027

FILING DATE: 04-0CT-1991
ATTORNEY-AGENT INFORMATION:
NAME: Spruill, W. Murray
REGISTRATION NUMBER: 3-18805/A/CGC 1577/CIP
TELECOMMUNICATION INFORMATION:
TELEPHONE: (919)541-8615
TELEFANE: (919)541-8615

INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 3468 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: other nucleic acid
DESCRIPTION: /desc = "Synthetic DNA"
HYPOTHETICAL: NO
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/951,715A
FILING DATE: 25-5EP-1992
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08459448A Patent No. 5859336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: 1..3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 44.73
Matches 214; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION:
OTHER INFORMATION:
CTHER INFORMATION:
US-07-951-715A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
US-08-459-448A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δà
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
```

1;

Gaps

```
266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \dot{\Omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
1049 TCGTGGCCCAGGCCAGGGCGTGTACCGCACCCTGAGCACCCTGTACCGCCGCC 1108
                                                                                                           1109 CCTTCAACATCGGCATCAACAACCAGCAGCTGAGCGTGCTGGACGGCACCGAGTTCGCCT 1168
                                                                                                                                                                                                      1169 ACGGCACCAGCAGCAACCTGCCCAGCGCCGTGTACCGCAAGAGCGGCACCGTGGACAGCC 1228
                                                                                                                                                                                                                                                                                             1229 TGGACGAGATCCCCCCCAGAACAACAACGTGCCCCCC---CGCCAGGGCTTCAGCCACC 1285
                                                                                                                                                                                                                                                                                                                                                                                     1286 GCCTGAGCCACGTGAGCATGTTCCGCAGCGGCTTCAGCAACAGCAGCGTGAGCATCATCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1346 GOGCCCCCATGTTCAGCTGGATCCACCGCAGCCCGAGTTCAACAACATCATCCCCAGCA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1406 GCCAGATCACCCAGATCCCCCTGACCAAGAGCACCAACCTGGGCAGCGGCACCAGCGTGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                     566 cctactcggtggtgggggtgggacgcatcgtgcccgtggacatctacatcccaggct 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              626 goccacctacggccgaggccctgctctacggcatcctgcagctgcagaggaagatcaagc 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1466 TGAAGGGCCCCGGCTTCACCGGCGGCGACATCCTGCGCCCCCAGCCCCGGGCCAGATC 1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       686 gggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccgccggcggagc 744
                                                                                                                                                                                                                                                                                                                                        506 agccgcgctacgtggtctccatggggagctgcgccaacggaggaggagctactactatt
                                                                     cottoggcotggcotgcgccgtggagatgatgcacatggcagcacccgctacgaca
                                                                                                                                                         386 tggaccgctttggcgtggtcttccgcgcccagcccgccagtccgacgtcatgatcgtgg
                                                                                                                                                                                                                                                  446 coggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Rothstein, Steven J.
APPLICANT: Bowman, Cindy G.
APPLICANT: Dawson, John L.
APPLICANT: Dawson, John L.
APPLICANT: Dace, Gary M.
APPLICANT: Suttie, Janet L.
APPLICANT: Suttie, Janet L.
APPLICANT: SYMTHETIC DNA SEQUENCE HAVING ENHANCED
TITLE OF INVENTION: SYMTHETIC DNA ACTIVITY IN MAIZE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: No. 6018104artis Corporation
STREET: Patent & Trademark Dept., 520 White Plains
STREET: Rd., POB 2005
CITY: Tarrytown
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: Patentin PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/459,595A
FILING DATE: 02-UN-1995
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/08459595A
Patent No. 6018104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Desal, Nalini M.
Lewis, Kelly S.
Kramer, Vance C.
Warren, Gregory W.
Evola, Stephen V.
Crossland, Lyle D.
Wright, Martha S.
Merlin, Ellis J.
Launis, Karen L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Koziel, Michael G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
ZIP: 10591-9005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
US-08-459-595A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
GENERAL IN
                                                                     326
                       q
                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                         òγ
                                                                                                                                                                                                                                                  QΫ́
                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
1169 ACGGCACCAGCAGCAACCTGCCCAGCGCCGTGTACCGCAAGAGGGGCACCGTGGACAGCC 1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1229 TGGACGAGATCCCCCCCCCAGAACAACGTGCCCCCC---CGCCAGGGCTTCAGCCACC 1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1286 GCCTGAGCCACGTGAGCATGTTCCGCAGCGGCTTCAGCAACAGCAGCGTGAGCATCATCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1049 regredecenseresecenseses de regeneras de conservados de construces de construces de constructivos de co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1109 CCTTCAACATCGGCATCAACAACCAGCTGAGCTGGGGCTGGAGGGGGGCACGGAGTTCGCCT 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1346 GCGCCCCCATGTTCAGCTGGATCCACCGCAGCGCCGAGTTCAACAACATCATCCCCAGCA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1406 GCCAGATCACCCAGATCCCCCTGACCAAGAGCACCAACCTGGGCAGCGCACCAGCGTGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtgggcccatga 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               386 tggaccgetttggegtggtetteegegeeageeegegeeagteegaegteatgategtgg 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   geccacctacggecgaggecetgetetacggeateetgeagetgeagaggaagateaage 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1466 TGAAGGGCCCCGGCTTCACCGGCGGCGACATCCTGCGCGCCACCAGCCCCGGGCCAGATC 1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      686 gggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccgccggagc 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ccttcggcctggcctgcgccgtggagatgatgcacatggcagcaccccgctacgaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    506 agccgcgctacgtggtctccatggggagctgcgccaacggaggaggctactaccactatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        446 ccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctactcggtggtgaggggctgcgaccgcatcgtgcccgtggacatctacatcccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product= "Full-length pure maize
optimized synthetic Bt"
/note= "Disclosed in Figure 3 as synlT.mze"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 3468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.3%; Score 43.8; DB 3;
44.7%; Pred. No. 0.15;
Live 0; Mismatches 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Pace, Gary M.
REGISTRATION NUMBER: 40403
REFERENCE/DOCKET NUMBER: CGC 1577/CIP/DIV3
TELECOMMUNICATION:
TELECOMMUNICATION: (919)541-8582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: other nucleic acid
DESCRIPTION: /desc = "Synthetic DNA"
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/951,715
FILING DATE: 25-SEP-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/772,027
FILING DATE: 04-0CT-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08459504B Patent No. 6075185 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: 1.3468
OTHER INFORMATION: /prod
OTHER INFORMATION: Optim
OTHER INFORMATION: /note
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (919)541-8689
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 3468 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-459-504B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-459-595A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Sim
Matches 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
```

ä

```
1229 TGGACGAGATCCCCCCCCAGAACAACAACGTGCCCCC---CGCCAGGGCTTCAGCCACC 1285
    CCTTCAACATCGGCATCAACAACCAGCAGCTGGTGGTGGTGGAGGGCACCGAGTTCGCCT 1168
                                                                                                                                                                                                         1169 ACGGCACCAGCAGCAACCTGCCCAGCGCCGTGTACCGCAAGAGCGGCACCGTGGACAGCC 1228
                                                                                                                                                                                                                                                                                                                                                                          1286 GCCTGAGCCACGTGAGCATGTTCCGCAGCGGCTTCAGCAACAGCAGCAGCGTGAGCATCATCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1406 GCCAGATCACCCAGATCCCCCTGACCAAGAGCACCAGGGCAGCGGGCACCAGCGTGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1346 GCGCCCCCATGTTCAGCTGGATCCACCGCAGCGCCGAGTTCAACAACATCATCCCCCAGCA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               goccacctacggccgaggcctgctctacggcatcctgcagctgcagaggaagatcaagc 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1466 TGAAGGGCCCCGGCTTCACCGGCGCGACATCCTGCGCCCGCACCAGCCCGGCCAGATC 1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   686 gggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccgccggagc 744
                                                                                                                                                                                                                                                                                                                                                                                                                                  566 cctactcggtggtggtggggctgcgaccgcatcgtgcccgtggacatctacatcccaggct
                                                                        cetteggeetggeetgeggeegtggagatgatgeacatggeageaceegetaegaea
                                                                                                                                                              386 tggaccgctttggcgtggtcttccgcgccagcccgcgccagtccgacgtcatgatcgtgg
                                                                                                                                                                                                                                                       ocggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                                                                                                           506 agccgcgctacgtggtctccatggggagctgcgccaacggaggaggctactaccactatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 2, Application US/08459444A; Patent No. 6121014; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Koziel, Michael G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Desai, Nalini M.
Lewis, Kelly S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
US-08-459-444-2
                                                                                                                1109
                                                                     326
                                                                                                                                                                                                                                                     446
                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product= "Full-length pure maize optimized synthetic Bt" /note= "Disclosed in Figure 3 as synlT.mze"
                                                                                                                                                                                                                                                                                                                             APPLICANT: Suttie, Janet L. TITLE OF INVENTION: SYMPHETIC DNA SEQUENCE HAVING ENHANCED TITLE OF INVENTION: INSECTICIDAL ACTIVITY IN MAIZE NUMBER OF SEQUENCES: 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/459,504B FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     No. 6075185artis Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/459,595
FILING DATE: 02-70W-1995
APPLICATION NUMBER: US 07/951,715
FILING DATE: 25-SEP-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/772,027
FILING DATE: 04-007-1991
ATTORNEY, AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              other nucleic acid /desc = "Synthetic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                        Rothstein, Steven J
Bowman, Cindy G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 3054 Cornwallis Road CITY: Research Triangle Park
                                                                                                    Evola, Stepne....
Crossland, Lyle D.
Wright, Martha S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Meigs, J. Timothy
REGISTRATION NUMBER: 38,241
REFERENCE/DOCKET NUMBER: GG
TELECOMMUNICATION INFORMATION:
                                                                                        Gregory W.
Stephen V.
Michael G
                                                                                                                                                                               Merlin, Ellis J.
Launis, Karen L.
                                                                   Vance C.
                                                Kelly S.
                                                                                                                                                                                                                                                                     Dawson, John L.
Dunder, Erik M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (919)541-8587
TELEFAX: (919)541-8689
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                              Pace, Gary M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: 1.3468
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION:
                                                              Kramer, '
Warren, (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: line
MOLECULE TYPE: C
DESCRIPTION: ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-459-504B-2
                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGIH:
                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                APPLICANT
APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE:
```

```
Agribusiness Biotechnology Research, Inc
Kramer, Vance C.
Warren, Gregory W.
Evola, Stephen V.
Crossland, Lyle D.
Wright, Martha S.
Merlin, Ellis J.
Launis, Karen L.
TITLE OF INVENTION: METHOD FOR PRODUCING A PLANT-OPTIMIZED
NUCLEIC ACID CODING SEQUENCE
                                                                                                                                                                                                                                                                                                                                                    COUNTRY TO COUNTRY USA

ZIP: 27709

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATE:

FILING DATE: 02-Jun-1995

CLASSIFICATION: CURKNOWN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/951,715
FILING DATE: 25-SEP-1992
FILING DATE: US 07/772,027
FILING DATE: 04-OCT-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 6121014artis A
STREET: 3054 Cornwallis Road
CITY: Research Triangle Park
STATE: NC
                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
```

5.3%; Score 43.8; DB 3; 1 llarity 44.7%; Pred. No. 0.15; Conservative 0; Mismatches 262;

Similarity

Query Match Best Local Simi Matches 214;

ò

Length 3468;

```
NAME/KEY: CDS
                                                  27709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; LOCATION;
US-09-053-549-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΫ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1049 TCGTGGCCCAGCTGGGCCAGGGCGTGTACCGCACCCTGAGCACCCTGTACCGCCCCC 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1109 CCTTCAACATCGGCATCAACAACCAGCAGCTGAGCGTGCTGGACGGCACGGAGTTCGCCT 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1286 GCCTGAGCCACGTGAGCATGTTCCGCAGCGCTTCAGCAACAGCAGCGTGAGCATCATCC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1169 ACGCCACCACCACCACCTGCCCAGCGCCGTGTACCGCAAGAGCGGCACCGTGGACAGCC 1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1346 GCGCCCCCATGTTCAGCTGGATCCACCGCAGCGCCGAGTTCAACAACATCATCCCCAGCA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1229 IGGACGAGATCCCCCCCAGAACAACAACGACCCCCC---CGCCAGGGCTTCAGCCACC 1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1406 GCCAGATCACCCAGATCCCCCTGACCAAGAGCACCAGCGGCAGCGGCACCAGCGTGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     266 tggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtggcccatga 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cottoggcotggcotgctgcgcgtggagatgatgcacatggcagcacccgctacgaca 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  506 agccgcgctacgtggtctccatggggagctgcgaccaacggaggaggctactaccactatt 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cctactcggtggtgagggctgcgaccgcatcgtgcccgtggacatctacatcccaggct 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     goccacctacggocgaggocotgototacggoatccgcagotgoagaggaagatcaago 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1466 TGAAGGGCCCCGGCTTCACCGGCGGCGAATCCTGCGCCGCCACCAGCCCCGGCCAGATC 1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           686 gggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccgccgccggagc 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 386 tggaccgctttggcgtggtcttccgcgccagcccgcgccagtccgacgtcatgatcgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            446 coggicacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Desal, Nalini
TITLE OF INVENTION: No. 6121521el Insecticidal Protein and Gene
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 6121521artis Corporation
STREET: 3054 Cornwallis Rd.
CITY: Research Triangle Park
                                                                                                                                                                                                                                                                                                                                                                   // OTHER INFORMATION: /product= "Full-length pure maize optimized synthetic Bt" /note= "Disclosed in Figure 3 as synlT.mze" /SEQUENCE DESCRIPTION: SEQ ID NO: 2:
REGISTRATION NUMBER: 38,241

REBERENCE/DOCKET NUMBER: S-18805/P1/CGC1577/CIP/DIV6

TELECOMMUNICATION INFORMATION:
TELEPHONE: (919)541-8897

INFORMATION FOR SEG ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 3468 base pairs
TYPE: NUCLEIC acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5.3%; Score 43.8; DB 3; Length 3468;
44.7%; Pred. No. 0.15;
tive 0; Mismatches 262; Indels 3
                                                                                                                                                                                                                         TOPOLOGY: linear MOLECULE TYPE: other nucleic acid DESCRIPTION: /desc = "Synthetic DNA"
                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: 1..3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application US/09053549 Patent No. 6121521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                              HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 214; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-053-549-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
```

```
1049 regresecensersescenses estata es
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1169 ACGGCACCAGCAGCAACCTGCCCAGCGCCGTGTACCGCAAGAGCGGCACCGTGGACAGCC 1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1109 cerreaacareggeareaacaaceageagergergerggaeggeeggeaegeagriegeer 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1406 GCCAGATCACCCAGATCCCCTGACCAAGAGCACCAACCTGGGCAGCGGCACCAGCGTGG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tggtggccaagctggatgacctcgtcaactgggcccgcggagttctctgtgggcccatga 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326 cetteggcetggcetgetgegegtggagatgatgeacatggeageacceegetacgaca 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            geceaectaeggeegaggeeetgetetaeggeateetgeagetgeagaggaagateaage 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgccggcggagc 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1229 TGGACGAGATCCCCCCCCAGAACAACAACGTGCCCCCC---CGCCAGGGCTTCAGCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         506 agccgcgctacqtggtctccatggggggggcggccaacggaggaggctactaccactatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             386 tggaccgctttggcgtggtcttccgcgccagcccgcggccagtccgacgtcatgatcgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       coggoacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            566 cctactcggtggtgaggggttgcgacgcatcgtgcccgtggacatctacatcccaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43.8; DB 3; Length 3 Pred. No. 0.15; 0; Mismatches. 262; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product= "Full-length pure maize optimized synthetic Bt"
                               COMPUTER: TENDED GONDALISK
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: TENDED GONDALISH
COMPUTER: PATENTINE PC-DOS/MS-DOS
SOFTWARE: PATENTIN PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/053,549
FILING DATE: UJ-APR-1998
CLASSIFICATION: 800
ATTONNEY/AGENT INFORMATION:
NAME: PAGE, GALTY M.
REGISTRATION NUMBER: CGC 1995
TELECOMMUNICATION INFORMATION:
TELEPRAK: 919-541-8889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: other nucleic acid
DESCRIPTION: /desc = "Synthetic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS:
LENGTH: 3468 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
1..3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 44.77
Matches 214; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS: single
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.3465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HYPOTHETICAL: NO
```

```
3981 ccgggccgacggcccaccgtgacctcggtggcctggagcccttgggagggcagccgcgt 4040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4041 caccgagggtgcgaccggggagcggctgcgccgcctcggcctgcgcccccccgc 4100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4101 gacggcgctcaccgccctggacaccgcgctc----ggccacggcgacaccgccgtcac 4154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  egecgaegacacegtectgageegegageteggtgegeteaceggegegegaeageageg 4334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1215 cotectegeegatetgeeegaggegeegeegegeetegaegageageagtegaegaegge 4274
1466 TGAAGGGCCCCGGCTTCACCGGCGCGACATCCTGCGCCGCACCAGCCCCGGCCAGATC 1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            273 caagetggatgacetcgtcaactgggcccggcggagttctctgtgggcccatgacettcgg 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        333 cetggeetgetgegeegtggagatgatgeacatggeageacecegetacgaeatggaeeg 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         453 acteaceaecaagatggeeceagecttegeaaggtetaegaecagatgeeggageegeg 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             513 ctacytgytctccatggggagctgcgccaacggaggaggctactaccactattcctactc 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     573 ggtggtgaggggtgggacgcatcgtgcccgtggacatctacatcccaggctgcccacc 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 393 ctttggcgtggtcttccgcgcccagcccgcgccagtccgacgtcatgatcgtggccggcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 11220;
                                                         RESULT 15
US-09-105-537.32
Sequence 32, Application US/09105537A
Sequence 32, Application US/09105537A
Patent No. 626502
GENERAL INFORMATION:
APPLICANT: Sherman, D.H.
APPLICANT: Liu, H.
APPLICANT: Liu, Y.
APPLICANT: Liu, Y.
APPLICANT: Liu, B.
CURRENT ENVENTION: DNA encoding methymycin and pikromycin FILE REFERENCE: 600-438US1
CURRENT APPLICATION NUMBER: US/09/105,537A
CURRENT PILLNG DATE: 1998-06-26
NUMBER OF SEQ ID NOS: 43
SOFTWARE: PESSEE for Windows Version 3.0
SEQ ID NO 32
LENGTH: 11220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 5.3%; Score 43.8; DB 4; Best Local Similarity 45.5%; Pred. No. 0.19; Matches 199; Conservative 0; Mismatches 232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: DNA
; ORGANISM: Streptomyces venezuelae
US-09-105-537-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | | ||| | ||| ggccgtcgacacggggc 4411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              633 tacggccgaggccctgc 649
Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

Search completed: February 12, 2002, 18:09:48 Job time: 2851 sec

ĕ

```
AW250024 2819583.3prime NII
BG683330 602651438F1 NIH_M
AW546476 L0008605-3 NIA NIH_M
BF680256 6021710571 Soarce
BE562290 601335414F1 NIH_M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db.xref="taxon:966"
/clone_lib="IMAGE:4662381"
/clone_lib="IMAGE:4662381"
/clone_lib="NiH_MGG:18"
/tissue_type="large cell carcinoma"
/tasue_type="large cell carcinoma"
/note="Organ: lung: Vector: pOTB7; Site_1: Xhol; Site_2:
/note="Organ: lung: Vector: pOTB7; Site_1: Xhol; Site_2:
/note="Organ: lung: Vector: pOTB7; Site_1: Xhol; Site_2:
/note="Conditional Carcinoma"
/note="Organ: lung: Vector: pOTB7; Site_1: Xhol; Site_2:
/note="Conditional Carcinoma"
/tasue_carcinomatical Carcinomatical Carcinomati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 695) NIH-MGC http://mgc.ncl.nih.gov/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        National institutes of health, Manmalian Gene Collection (McC) Contact: Robert Strausberg, Ph.D. Contact: Robert Strausberg, Ph.D. Contact: Robert Strausberg, Ph.D. Contact: Robert Strausberg, Ph.D. Enail: Gapba-rémail.nlh.gov
Tissue Procurement: DCTD/DFD/Gazdar
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Preparation: Ling Hong/Rubin Laboratory
DNA Sequencing by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MCC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLCM1462 row: o column: 22
High quality sequence stop: 691.
                                                                                                                                                                                                                                                                                                                                                  BG488658 695 bp mRNA EST 27-MAR-2001 602534588F1 NIH_MGC_18 Homo sapiens cDNA clone IMAGE:4662381 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length: 213
Gaps: 0
Percent Identity: 99.531
           2.9e-70
3.8e-69
6.8e-69
1.4e-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: BG488658 from: 1 to: 695
       1426.06
1405.95
1401.35
1396.03
1381.32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG488658.1 GI:13450165
       821.00
811.50
807.00
805.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality: 1108.00
Ratio: 5.226
nilarity: 99.531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-525-867-1 x BG488658
                                                                                                                                                                                                                                      seq_name: gb_est2:BG488658
                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
BG488658
                                                                                                                                                                                                                                                                                                              seq_documentation_block:
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
       gb_est1:AW250024
gb_est2:BG683330
gb_est1:AW546476
gb_est2:BF682026
gb_est1:BE563290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Documentation | BC488658 | BC482488FI NIH_MGC_18 | BG478658 | BC2671984FI NIH_MGC_21 | BG478658 | BC2671984FI NIH_MGC_21 | BG479637 | BC271984FI NIH_MGC_21 | BF34254 | BC2011145FI NIH_MGC_21 | BF34254 | BC2011145FI NIH_MGC_21 | BF734254 | BC2011145FI NIH_MGC_7 | BE734254 | BC2011145FI NIH_MGC_7 | BC494103 | BC251937FI NIH_MGC_7 | BC494103 | BC4941103 | BC49411 | BC49411 | BC494103 | BC495411 | BC49411 | BC49611 | BC49411 | BC49611 | BC4961 | BC49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF46821 UI-M-CCCC ayf-a-04-0-01
B133809 60299309F1 NH MGC_12
BE591803 UI-M-CCCO-ayf-a-04-0-01
BF119921 601758003F1 NCI_CGAP_M
A393949 A393949 dkf4246 Gallu
BG967059 60834296F1 NCI_CGAP_C
AW245467 2822901.3prime NIH_MGC
AW245467 2822901.3prime NIH_MGC
BF671108 602150944F1 SOAFES_man
BF682739 602117105F1 SOAFES_man
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           230206 MARC 2PIG SUS 8
602150934F1 NIH_MGC_81
602117105F1 Soares_mam
                                                                                                                                                                                                                                                                                              -WODEL-frame+_p2n.model -DEV-x1h
-Q=/Cgn2_1/USPTO_spool/USO9528667/runat_12022002_111927_15597/app_query.fasta_1.272
-DB-BST -QFMT=fastap -SUFFIX-rst -GAPOP-12.000 -GAPEXT-4.000
-QAPEXT-4.000 -LOOPCL-0.000 -CAPOP-4.500
-QGAPEXT-7.000 -LOOPCL-0.000 -XGAPEXT-0.500 -FGAPOP-6.000
-FGAPEXT-7.000 -YGAPOP-10.000 -YGAPEXT-0.500 -FGAPOP-6.000
-FGAPEXT-7.000 -YGAPOP-10.000 -YGAPEXT-0.500 -FGAPOP-6.000
-LISTA5 -DOCALIGN-200 -THR_SCORE-pct -THR_MAX-100 -THR_MIN-0
-ALIGN-15 -MODE-LOOPCL -OUTFMT-Pfs -NORM-ext -HEAPSIZE=500
-MINLEN-0 -MAXLEN-2000-00000 -USER-US09525867_eCGN_1_1.3758
-NOPE-6 -ICPU-3 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30
                                                                                                                                                               version 4.5,
                                                                                                                                                               software,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   out_format : pfs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BSC COTE L COTE 
                                                                                                                                                       Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1000 1925 887 1108 00 1925 887 1102 00 1925 887 1102 00 1925 887 1102 00 1925 887 1102 00 1925 887 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 1914 34 1102 00 191
       ESI: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database: EST:*
Database sequences: 11351937
Database length: 1077911985
Search time (sec): 1179.910000
                                                                               7:52 PM
of: US-09-525-867-1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Search information block:
Query: US-09-525-867-1
Query length: 213
                                                                                                                                                                                                                                                              Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Strd
                                                                           Date: Feb 12, 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est2:BF442354
gb_est1:BF743056
gb_est1:BF733056
gb_est2:BG491103
gb_est2:BI116730
gb_est2:BI116730
gb_est2:BF795373
gb_est2:BF795373
gb_est2:BG765790
gb_est2:BG765790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_est2:BG765478
gb_est2:BF968344
gb_est2:BL260297
gb_est2:BE897893
gb_est2:BG336739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est2:81334795
gb_est2:86331924
gb_est1:8E407957
gb_htc:AK003132
gb_est2:8F608952
gb_est2:8G604362
gb_est1:8E537419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est2:BG967059
gb_est1:AW245467
gb_est2:BF0779568
gb_est2:BF671108
gb_est2:BF682739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est1:AL524830
gb_est2:BF468221
gb_est2:BI333809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est2:BG488658
qb_est2:BG334974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est2:BG706832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est2:BE951803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qb_est1:AJ393949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_est2:BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est2:BF119921
                                                                                                                                                       About: Results
```

67 211 84 261 101 117

134

151

167

```
from: 1 to: 704
                                                                                                                                                                                                                                                                                                                                                                                                                 5.188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: BG334974
                                                                                                                                                                                                                                                                                                                                                                                                Quality: 1105.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-525-867-1 x BG334974
                                                                                                                                                                                                                                                                                                                                                                                                                     Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                            alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134
                                                                                                                                                                                                                                                                                          BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases 1 to 704)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS BG334974 704 bp MRNA EST 27-FEB-2001
DEFINITION 602403406F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:4541304 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Robert Strausberg, Ph.D.
Email: Gapbs-remail.nih.gov
Tissue Procurement: ATC
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lln.gov
Plate: LLCM1219 row: k column: 01
TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                       rAspValMetileValAlaGlyThrLeuThrAsnLySMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                               84
                                                                                                                                          AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          euArgLysVallyrAspGlnMetProGluProArgTyrValValSerMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               511 GAGGGCTGCGACCGCATCGTGCCCGTGGACATCTACATCCCAGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            611 ATCAAGCGGGAGCCGAGGCTGCAGATCTGGTACCGCAGG 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plate: LLCM1219 row: k column: 01
High quality sequence stop: 699.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BG334974
BG334974.1 GI:13141412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_est2:BG334974
```

human.

source

FEATURES

VERSION KEYWORDS SOURCE ORGANISM

ACCESSION

REFERENCE AUTHORS TITLE JOURNAL

COMMENT

```
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone=lib=NIH_MGC_21"
/clone=lib=NIH_MGC_21"
/tissue_type="choriocarcinoma"
/ti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       404 TTCGCAAGGTCTACGACCAGATGCCGGAGCCGCGCTACGTGGTCTCCATG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    184 ProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLy 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 ATGCCGGTGCTGTCAGCTCCTGGCCTGCGGGCTTCCGGATCCTTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  254 TCGGCCTGGCCTGCCGTGGAGATGATGCACATGGCAGCACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67 uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101 TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167 lArgGlyCysAspArgIleValProValAspIle.TyrIleProGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    504 GAGGGGCTGCGACCGCATCGTGCCCGTGGACATTCTACATCCCAGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps: 1
Percent Identity: 99.533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
```

DEFINITION

ACCESSION VERSION KEYWORDS SOURCE

ORGANISM

REFERENCE AUTHORS TITLE JOURNAL COMMENT

```
83 ACGCTCCAGCGTGGGCCCGGCTGTGCAGGCACGAGGTGTCCATCAGAGCG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG479937.1 GI:13412216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name: gb_est2:BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA sequence.
BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
LOCUS BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Uppublished (1999)
Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Tissue Procurement: MixLos Palkovits, M.D., Ph.D.
Tissue Procurement: MixLos Palkovits, M.D., Ph.D.
CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
Toshiyuki and Pierro Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: The T.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLAM10676 row: g column: 22
High quality sequence stop: 762.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Organ: Drain; Vector: pBluescriptR (modified bluescript KS+); Site_1: BamHi; Site_2: Sall:xhoI (gtcgag bluescript KS+); Site_1: BamHi; Site_2: Sall:xhoI (gtcgag ): Oligo-dr primed using primer 5'-TTTTTTTTTTTTTTTTTTVN-3', Size-elected for average insert size 2.3 kb and normalized to ROT 5. This is a primary library enriched for full-length clones and constructed using the cap-trapper method (carninci, in preparation). Library constructed by M. Brownstein (WIMH/NHGRI, National Institutes of Health). Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 774) NIH-MGC http://mgc.nci.nih.gov/. NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                        BG706832 774 bp mRNA EST 07-MAY-2001 602671984F1 NIH_MGC_96 Homo sapiens cDNA clone IMAGE:4794669 5',
33 AIGGCGGTGCTGTCAGCTCCTGGCCTGCGGGCTTCCGGATCCTTGGTCT 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MetalaValLeuSerAla?roGlyLeuArgGlyPheArgIleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps: 0
Percent Identity: 99.061
                                                                                  200 sileLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                         604 GATCAAGCGGGAGCGGAGCTGCAGATCTGGTACCGCAGG 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Romo sapiens"
/db_xref="taxon:9606"
/clone="TMAGE:4794669"
/clone=lib="NIH_MGC_96"
/tissue_type="Nypothalamus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: BG706832 from: 1 to: 774
                                                                                                                                                                                                                                                                                                                                                                                                      BG706832.1 GI:13982569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio: 5.223
Percent Similarity: 99.061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality: 1102.00
Ratio: 5.223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-525-867-1 x BG706832
                                                                                                                                                                                                seq_name: gb_est2:BG706832
                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
BG706832
                                                                                                                                                                                                                                                       seq_documentation_block:
LOCUS
BG706832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
```

source

FEATURES

alignment_scores

BASE COUNT ORIGIN

```
Homo sapiens Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Bukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo. 1 (bases 1 to 836) NIH-MACO http://mgc.nol.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG479937 836 bp mRNA EST 21-MAR-2001 602527493F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:4651103 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I,M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution in MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: Plate: LLCM1413 row: i column: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151 GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    233 GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCT 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 TyraspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            383 CGACGTCATGATCGTGGCCGGCACACTCACCAACAAGATGGCGCCAGCGC 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                29
                                                                                                                                                                                                                                   84
                                                                                                                                                  333 TACGACATGGACCGCTTTGGCGTGTCTTCCGCGCCAGCCCGGCCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 533 GAGGGGTGCGACCGCATCGTGCCGTGGACATCTACATCCCAGGCTTGC
                                                                                                             51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                   uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                483 GGGAGCTGCGCCAACGGAGGAGGCTACTACCACTATTCCTACTCGGTGGT
34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
```

us-09-525-867-1.rst

```
507 TGAGGGGCTGCGACCGCATCGTGCCCGTGGACATCTACATCCCAGGCTGC
                                                                                                                                                                                                                                                                                                              5', mRNA sequence.
BF342354
BF342354.1 GI:11289355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality: 1081.00
Ratio: 5.123
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to: BF342354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block: US-09-525-867-1 x BF342354
                                                                                                                                                                                                           seq_name: gb_est2:BF342354
                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores
                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                     / Organism="Homo sapiens"

/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone='Inaxon:9606"
/clone='Inb=WilthQCC_21"
/tissue_type="choriocarcinoma"
/tab_host="hilds (phage-resistant)"
//ab_host="hilds (phage-resistant)"
/note='Organ: placenta: Vector: pOTB7; Site_1: Xho!;
Site_2: EcoR1; cDNA made by oligo-dr priming.
Directionally cloned into EcoRI/XhoI sites using the following 5' adaptor: GGCAGGAG(G). Size-selected >500bp for average insert size 1:8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-CDNA synthesis kit of California, Berkeley) using ZAP-CDNA synthesis kit 1 lothers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGCTCCAGCGCTGGGCCCGGCTGTGCAGGCACGAGGTGTCCATCAGAGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107 GIGGCCACCGAIGGCCCAAGCAGCACCCAGCCTGCCTGCCAAAGGCCAG 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157 AGCCGTGGCTCCCAAACCCAGCAGCCGGGGGGGAGTATGTGGTGGCCAAGC 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84 PheGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProAr 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gTyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnS 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150 tGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValV 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   167 alArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCys 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 ValAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaAr 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 Argecegrecrercaecrecresecreseserresearcerreserer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 uArgSerSer.ValGlyProAlaValGlnAlaArgGlyValHisGlnSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gAlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               euAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LeuArgLysValTyrAspGlnMetProGluProArgTyrValValSerMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGAGCTGCGCCAACGGAGGAGGCTACTACCACTATTCCTACTCGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Identity: 99.065
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from: 1 to: 836
High quality sequence stop: 751
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality: 1102.00
Ratio: 5.174
ilarity: 99.533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-525-867-1 x BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                      152
                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          407
                      FEATURES
```

```
Eukaryota; Metacaa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metacaa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases 1 to 804)
National Los 1, Mayor. noi.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: capabs-rémall.nih.gov
Tissue Procurement: David N. Louis, M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The T.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLAM9409 row: j column: 11
High quality sequence start: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
/dlone="itaxon:9606"
/clone=lib="NcI_GAR_Brin64"
/clone=lib="McI_GAR_Brin64"
/tissue_type="glioblastoma with EGFR amplification"
/lab_host="bullob (TI phage-resistant)"
/note="organ: brain; Vector: pCWY-SPORT6; Site_1: Not1:
Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.57 kb. Constructed by Life
Technologies. Note: this is a NCI_CGAP Library."
                                                                                                                                                                                                                                                                                                                                                         seg_documentation_block:
LOCUS BF342354 804 bp mRNA EST 22-NOV-2000
DEFINITION 602013145F1 NCI_CGAP_Brn64 Homo sapiens cDNA clone IMAGE:4148842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73 GCGCTCCAGCGTGGGCCCGGCTGTGCAGGCACGAGGTGTCCATCAGAGCG 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23 ATGGCGGTGCTGTCAGCTCCTGGCCTGCGCGGCTTCCGGATCCTTGGTCT 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 uArgSerSerValGLyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe 17
Gaps: 0
Percent Identity: 100.000
                                                                                                                                               200 sileLysArgGluArgArgLeuGlnileTrpTyrArgArg 213
                                                                                                                                                                                      607 GATCAAGCGGGAGCGGAGGCTGCAGATCTGGTACCGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                t0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1
```

84

223

29

323

117

101

373 134 473

423 151 184 573

523

622

```
/organism="Homo sapiens"
/db.xref='taxon:9606"
/clone='InAGE:384419"
/clone_thp="NHL MGC_21"
/tissue_type="choriocarcinoma"
/lab_host="bH108 (phage-resistant)"
/note="Organ: placenta: Vector: pOTB7; Site_1: XhoI;
Site_2: EcoRI; cDNA made by oligo-dT priming.
Directionally cloned into EcoRIXAho! sites using the Directionally cloned into EcoRIXAho: Site_selected >500pp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using Exp-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       175 ovalaspileTyrileProGlyCysProProThralaGlualaLeuLeuT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109 ValPheArgAlaSerProArgGlnSerAspValMetIleValAlaGlyTh 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               309 GTCTTCCGCGCCCAGCCCAGTCCGACGTCATGATCGTGGCCGGCAC 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 rLeuThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetP 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159 TyrTyrHisTyrSerTyrSerValValArgGlyCysAspArgIleValPr 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59 gcaggcacgaggrerccarcagagcergeccacgarggcccaagcagca 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359 ACTCACCAACAAGATGGCCCCAGCGCTTCGCAAGGTCTACGACCAGATGC 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192 yrGlyIleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGln 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      109 CCCAGCCTGCCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9 CTGCGCGCCTTCCGGATCCTTGGTCTGCGCTCCAGCGTGGGCCCGGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       209 ccedagricicistescecardacericescerescerecescesses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9 LeuArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyProAlaVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42 hrGlnProAlaLeuProLysAlaArgAlaValAlaProLysProSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59 ArgGlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gArgSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25 lGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerSerT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92 luMetMetHisMetAlaAlaProArgTyrAspMetAspArgPheGlyVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           roGluProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTGGACATCTACATCCCAGGCTGCCCACCTACGGCCGAGGCCCTGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length: 205
Gaps: 0
Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to: 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouality: 1080.00
Ratio: 5.268
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to: BE733056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x BE733056
                                                                                                                                                                                                                                                                                                                                                                            116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases 1 to 711)
NH-MGC http://mgc.nci.nih.gov/
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: ArC
cDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov
Plate: LLCM540 row: a column: 16
High quality sequence stop: 711.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
LOCUS BB733056 711 bp mRNA EST 15-SFP-2000
DEFINITION 601569557F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:3844119 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                       euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        272
                                                                                                                                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rAspValMetileValAlaGlyThrLeuThrAsnLySMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TICGCAAGGICIACGACCAGAIGCCGGAGCCGCGCIACGIGGICICCAIG 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   resectroscreersecressagarsarscarasscaccescrees 322
                                                                                                                                                                                                                84
                                                                                                                                                                                                                                            51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                        TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 IleLysArgGluArgArgLeuGlnIleTrpTyr 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE733056.1 GI:10147048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
BE733056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_est1:BE733056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
```

158

58

28 42 208

75

108 308

TITLE JOURNAL COMMENT

FEATURES

REFERENCE AUTHORS

ACCESSION VERSION KEYWORDS

258

human.

KEYWORDS SOURCE ORGANISM ACCESSION VERSION

AUTHORS TITLE JOURNAL

COMMENT

FEATURES

REFERENCE

321

221

271

94

ø

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases 1 to 738)
NIH-MGC http://mgc.ncl.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
LOCUS BG491103 738 bp mRNA EST 27-MAR-2001
DEFINITION 602519937F1 NIH_MGC_18 Homo sapiens cDNA clone IMAGE:4638441 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA Library Preparation: Ling Hong/Rubin Laboratory cDNA Library Arrayed by: The L.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134 euArgLysValTyrAspClnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 TGGCCACCGATGGCCCAAGCAGCACCCAGCCTGCCTGCCAAAGGCCAGA 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117 rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         422 Tregenaricande accada recedende concerce recorded evaluation of the second contraction of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              571 caccracecceaececracrareecarcracecaecrecaecracaeaag 620
         34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                          51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                 67 uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLCM1400 row: j column: 10
High quality sequence stop: 738.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            272 redecerdecreececeredagardardecaradecaccacecee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  621 ATCAAGCGGGAGCGGAGGCTGCAGATCTGGTACCGCAGG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov
Tissue Procurement: DCTD/DTP/Gazdar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BG491103
BG491103.1 GI:13452615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: gb_est2:BG491103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 879)

2 MIH-Mod http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

2 Unpublished (1999)

3 MIH-Modert Strausberg, Ph.D.

3 Email: cgapbs-remail.nih.gop

4 Contact: Robert Strausberg, Ph.D.

5 Email: cgapbs-remail.nih.gop

5 Contact: Robert Strausberg, Ph.D.

6 Email: cgapbs-remail.nih.gop

7 Thissue Procurement: DCTD/DTP

7 CONA Library Preparation: Ling Hong/Rubin Laboratory

7 CONA Library Arrayed by: The L.M.A.G.E. Consortium (LINL)

8 Sequencing by: Incyte Genomics, Inc.

7 Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image:llnl.gov

8 Righ quality sequence stop: 773.

8 High quality sequence stop: 773.

1 Location/Qualifiers

1 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /u_rie__radanilyoo

/clone_lib="NIH_MGC_7"

/clone_lib="NIH_MGC_7"

/tissue_rype="small cell carcinoma"

/tissue_rype="small cell carcinoma"

/tissue_rype="small cell carcinoma"

/tispue_none="macgan: lung; Vector: poTBF; Site_1: XhoI; Site_2:

/note="none" lung; Vector: poTBF; Site_1: XhoI; Site_2:

/note="macgan: lung; Vector: poTBF; Site_1: XhoI; Site_2:

/note="macgan: lung; Vector: poTBF; Site_1: XhoI; Site_2:

/note="macgan: lung; Vector: poTBF; Site_2: Score in the following 5'

/note="macgan: lung; Vector: poTBF; Site_2: Score in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit

(Stratagene) and Supersoribt II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                                                                                               1 MetalaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 ATGGCGGTGCTGTCAGCTCCTGGCCTGCGCGCCTTCCGGATCCTTGGTCT 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Identity: 99.061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: BE794266 from: 1 to: 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BE794266
BE794266.1 GI:10215464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality: 1080.00
Ratio: 5.118
Percent Similarity: 99.061
                                                                                                                           209 IleTrpTyrArgArg 213
                                                                                                                                                                                                        609 ATCTGGTACCGCAGG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-525-867-1 x BE794266
                                                                                                                                                                                                                                                                                               seq_name: gb_est2:BE794266
```

166

BASE COUNT ORIGIN

alignment_scores:

```
184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality: 1062.00
Ratio: 5.232
Marity: 99.510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to: BI116730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-525-867-1 x BI116730
                                                                                                                                                                             seq_name: gb_est2:BI116730
                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
         /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="Ixaxon:9606"
/clone="Ixaxon:9606"
/clone_lib="NiH_MGG_18"
/clone_lib="NiH_MGG_18"
/issue_type="large_cell carcinoma"
/lab_nost="bull08 (phage-resistant)"
/note="Organ: lung; Vector: poTBF; Site_l: XhoI; Site_2:
EcoRI; cDNA made by oligo-dr priming. Directionally cloned
into EcoRI/AhoI sites using the following 5' adaptor:
GGACGAG(G). Library constructed by Ling Hong in the
laboratory of Gerald M. Rubin (University of California,
Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and
Superscript II RT (Life Technologies). Note: this is a
NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107 TGGCCACCGATGGCCCAAGCACCCAGCCTGCCTGCCAAAGGCCAGA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     257 TCGGCCTGGCCTGCTGCGCCGTGGAGATGATGCACATGGCAGCACCCCGC 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167 largGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157 GCCGTGGCTCCCAAACCCAGCAGCGGGGGGGGAGTATGTGGTGGCGAAGCT 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               207 GGATGACCICGICAACIGGGCCCGCCGGAGIICICIGIGGCCCAIGACCI 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357 CGACGICAIGAICGIGGCCGGCACACICACCAACAAGAIGGCCCCAGCGC 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151 GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArglleLeuGlyLe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 AIGGCGGIGCIGICAGCICCIGGCCIGCGCGCCIICCGGAICCIIGGICI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length: 211
Gaps: 0
Percent Identity: 99.052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to: 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: BG491103
                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality: 1068.00
Ratio: 5.110
Percent Similarity: 99.052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-525-867-1 x BG491103
                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134
```

```
/note="Organ: lung; Vector: porB7; Site_1: XhoI; Site_2: BCORI; CDNA made by oligo-dT priming. Directionally closed into EcoRI/XhoI sites using the following 5' adaptor: GGCAGAGGA, Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 733)
NIH-MGC http://mgc.nci.nih.gov/
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ontract: Robert Strausberg, Ph.D.

Email: cgapbs-rémail.nih.gov
Tissue Procurement: DCTD/DTP

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov

Plate: LLCM1828 row: o column: 04

High quality sequence stop: 670.

Location/Qualifiers

1.733
                                                                                                                                                                                                                                                                                    seq_documentation_block:
LOCUS BI116730 733 bp mRNA EST 26-JUN-2001
DEFINITION 602868416F1 NIH_MGC_7 Homo sapiens cDNA clone IMAGE:5017179 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26 nAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerSerThrG 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10 ArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyProAlaValGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 CGCGGCTTCCGGATCCTTGTCTGCCTCCAGCGTGGGCCTGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="texton:9606"
/clone="IMAGE:5017179"
/clone=lib="NIH_MGC_7"
/tissue_type="small_cell_carcinoma"
/cell_line="MGC3"
/lab_host="DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length: 204
Gaps: 0
Percent Identity: 99.020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to: 733
                                                                                         201 IleLysArgGluArgArgLeuGlnIleTrpTyr 211
                                                                                                                            606 ATCAAGCGGGAGGGGAGGCTGCAGATCTGGTAC 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence. _____BII16730
BII16730
BII16730.1 GI:14567631
```

92

93

110

126

143

160

193

```
/organism="Homo saplens"
/db_xxef="taxon:9606"
/db_xxef="taxon:9606"
/clone="INAGE:4891946"
/clone="ID=NoH_MAG_19"
/tissue_type="neuroblastoma"
/tab_host="bH108 (phage=resistant)"
/note="Organ: brain; Vector: pOTB?; Site_1: XhoI; Site_2: ECoR; CDNA made by oligo-dT priming. Directionally cloned into EcoRI/XhoI sites using the following 5' adaptor: GGCAGCAG(G). Library constructed by ling Hong in the laboratory of Gerald M. Rubin (University of California. Berkeley) using ZAR-CDNA synthesis kit (Stratagene) and Superscript IRT (Life Technologies).
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ysValTyrAspGlnMetProGluProArgTyrValValSerMetGlySer 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19 rSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerValAlaT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCGTGGCCCGGCTGTGCAGCACGAGGTGTCCATCAGAGCGTGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCTTCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MetaspargPheGlyValValPheArgAlaSerProArgGlnSerAspVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ycysAspArgileValProValAspileTyrileProGlyCys.ProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrPheGlyL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           euAlaCysCysAlaValGluMetMetHisMetAlaAlaProArgTyrAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279 TGCCTGCTGCTGCGTGGAGATGATGCACATGGCAGCACCCGCTACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119 lMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaLeuArgL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36 hrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329 ATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTCCGACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValValArgGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529 CTGCGACCGCATCGTGCCCGTGGACATCTACATCCCAGGCTGCCACC...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length: 212
Gaps: 2
Percent Identity: 97.642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1 to: 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: BI195871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.094
98.113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality: 1059.50
Ratio: 5.094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-525-867-1 x BI195871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                          147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_block:
                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

(bases 1 to 788)

NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (WGC)
Unpublished (1999)

Contact: Robert Strausberg, Ph.D.
Fimall: Gapbs r@mall.nh.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incytte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov
Plate: LLCM171 row: m column: 03
High quality sequence stop: 770.
Location/Qualifiers

      seq_documentation_block:
      788 bp
      mRNA
      EST
      10-JUL-2001

      LOCUS
      BI195871
      10-JUL-2001

      DEFINITION 602756115F1 NIH_MGC_19 Homo sapiens cDNA clone IMAGE:4891946:
      9

      ACCESSION BI195871
      GI:14650891

      VERSION BI195871
      GI:14650891

                                                                                                    uThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            luProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyr 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          403 AGCCGCGCTACGTGGTCTCCATGGGGAGCTGCGCCAACGGAGGAGGCTAC 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TyrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVa 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176 lAspileTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    etMetHisMetAlaAlaProArgTyrAspMetAspArgPheGlyValVal 109
                                                                                                                                                                                                                                                                                                                                                                                                                     PheArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLe 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lylleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGlnIle 209
                                                                                                                                                                                                            gSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValGluM 93
     43 InProAlaLeuProLysAlaArgAlaValAlaProLysProSerSerArg
                                                                                                                                                                                                                                                                                                                                                 253 TGATGCACATGGCAGCACCCGGTACGACATGGACCGCTTTGGCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303 TICCGCGCCAGCCCGCCCAGICCGACGICAIGAICGIGGCCGGCACACI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               453 TACCACTATTCCTACTCGTGGTGAGGGGCTGCGACCGCATCGTGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seg_name: gb_est2:BI195871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210 TrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             603 TGGTACCGCAGG 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
```

178

52

78 36 228

69

278 102

96

136

ORGANISM

VERSION KEYWORDS SOURCE

REFERENCE AUTHORS TITLE JOURNAL

COMMENT

FEATURES

117

466 167 516 566

σ

```
Eukaryota Metazoa, Chordata, Craniata, Vertebrata; Euteleostomi, Bukaryota Butarota; Primates; Catarrhini, Hominidae; Homo.

Mammalia; Eutheria; Primates; Catarrhini, Hominidae; Homo.

I (bases 1 to 736.

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Unpublished (1994)

Tissue Procurement: DCID/Drp or Tissue Procurement: DCID/Drp con Albary Preparation: Ling Hong/Rubin Laboratory CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov Plate: LLCMB07 row: f column: 01

High quality sequence stop; 736.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
LOCUS BE79533 736 bp mRNA EST 20-SEP-2000
DEFINITION 601592903F1 NIH_MGC_7 Homo sapiens cDNA clone IMAGE:3946752 5',
                                                                                                                                                                                                                 318 TACGACATGGACCGCTTTGGCGTGTTTTCCGCGCCAC.CCSCGCCAGTC 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134 euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 218 GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCT 267
                                                                                                                                                                                                                                                                                                                                                                                                                                      117 rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                          168 GCCGTGCCCAAACCCACCAGCGGGGGGATTGTGTGGTGCCCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 467 GGGAGCTGCGCCAACAGAGGAGGGTACTACTATTCCTACTCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                           67 uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                             101 TyraspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               417 TTCGCAAGGTCTACGACCAGATGCCGGAGCCGCGCTACGTGGTCTCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151 GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:3946752"
/clone_lib="NIH_MGC_7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE795373.1 GI:10216571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_est2:BE795373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE795373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /Jissue_type="T cells from T cell leukemia"
//Issue_type="T cells from T cell leukemia"
//Issue_type="T cells from T cell leukemia"
//Issue_type="T cells from T cell leukemia"
was primed with a Nort-oligo(dT) primer. Five prime end
enriched, double-strended cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pcMvSPORT 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact : Feng Liang Life Technologies,
a division of Invitrogen 9800 Medical Center Drive
Rockville, Maryland 20850, USA Fax : (1) 301 610 8371
Email : filang@ilfetcen.com URL :
http://fulllengwl.invitrogen.com"
bftp://fulllengwl.invitrogen.com"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia; Eutheria, Primates, Catarrhini; Hominidae, Homo.

1 (bases 1 to 799)

Li,W.B., Gruber,C., Jessee,J. and Polayes,D.

Will-length cDNA libraries and normalization

Contact: Genoscope
                                                                                                                                                                                                                                                                  seg_documentation_block:
LOCUS ALS80649 799 bp mRNA EST 16-FEB-2001
DEFINITION ALS80649 LTI_NFL008_TC2 Homo sapiens cDNA clone CS0DJ007Y020 EACCESSION ALS80649 RNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                            186 ThralaGlualaLeuLeuTyrGly11eLeuGlnLeuGlnArgLys11eLy 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68 GCGCTCCAGCGTGGGCCTGGCTGTGCAGGCACGAGGTGTCCATCAAAGCG 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18 TIGGCGGTGCTGTCAGCTCCTGGCCTGCTCCGGATCCTTGGTCT 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MetalaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length: 212
Gaps: 0
Percent Identity: 97.170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="LTI_NFL008_TC2"
/sex="male"
                                                                                                      202 sArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                     626 GCGGGAGCGGAGCTGCAGATCTGGTACCGCAGG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to: 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CSODJ007YO20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1. .799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: AL580649 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                          AL580649.1 GI:12946873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ouality: 1056.00
Ratio: 5.053
Percent Similarity: 98.585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-525-867-1 x AL580649
                                                                                                                                                                                                                 seq_name: gb_est1:AL580649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                uman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
```

source

FEATURES

BASE COUNT ORIGIN

AUTHORS TITLE JOURNAL

COMMENT

REFERENCE

ACCESSION VERSION KEYWORDS SOURCE ORGANISM

```
/tissue_type="small cell carcinoma"
/cell_line="MGG3"
/lab_host="hd108 (page-resistant)"
/note="Organ: lung: Vector: porB7; Site_1: XhoI; Site_2:
EcoRI; cDNA made by oligo-dT priming. Directionally
cloned into EcoRI/XhoI sites using the following 5,
adaptor: GGCACGAG(): Size-selected >500bp for average
insert size 1:88b. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
california, Berkeley) using ZAP-cDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)."
7 a 244 c 240 g 125 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGGCTGCGACCGCATCGTGCCCCGTGGACATCTACATCCCAGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP
                                                                                                                                                                                                                                                                                                                                Gaps: 0
Percent Identity: 99.061
                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1 to: 736
                                                                                                                                                                                                                                                                                                                              4.995
                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: BE795373
                                                                                                                                                                                                                                                                                                          Quality: 1054.00
                                                                                                                                                                                                                                                                                                                                                                                     alignment_block:
US-09-525-867-1 x BE795373
                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                Ratio:
                                                                                                                                                                                                                 127
                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151
```

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone=InbaCB:458452B"
/clone=InbaCB:458452B"
/clone=InbaCB:458452B"
/tissue_type="renal cell adenocarcinoma"
/tab_host="bill0B (phage=resistant)"
/note="Organ: kidney; Vector: pOTB7; Site_1: XhoI; Site_2:
ECORI; cDNA made by oligo-dr priming. Directionally
cloned into ECORI/XhoI sites using the following 5'
adaptor: GGCACGAG(G). Size-selected.5500bp for average
insert size-1.8kb. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-CDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)."
55 a 279 c 278 g 156 t 2 others
                                                                                                                                                                                                                                                                                                                                    Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 910)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Robert Strausberg, Ph.D.
Email: gapbs r@mail.nih.gov
Tissue Procurement: DCTD/DTP
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.B. Consortium (LLNL)
DNA Sequencing by: The I.M.A.G.B. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.B. Consortium/LLNL at:
http://image.llnl.gov column: 01
High quality sequence stop: 702.
I. Ocation/Qualifiers
rce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  þe
                                                                                                                           57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vaps: 1
Percent Identity: 96.682
  213
                                           644
IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg
                          606 ATCAAGCGGGAGCGGAGCCTGCAGATCTGGTACCGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: BG419411 from: 1 to: 910
                                                                                                                                                                                                                       BG419411
BG419411.1 GI:13325917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio: 5.104
Percent Similarity: 97.630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1051.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x BG419411
                                                                                                                                                                                                      mRNA sequence.
                                                                                       seq_name: gb_est2:BG419411
                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195
                                                                                                                                                                                                                                                                  EST.
human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores:
                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                         ACCESSION
201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
```

134

```
/clone_lib="NIH_MGC_l6"
/tissue_type="retinoblastoma"
/lab_host="retinoblastoma"
/lab_host="bull08 (phage-resistant)"
/note="Organ: epe: Vector: poTBF; Site_l: XhoI; Site_2:
EcoR; cDNA made by oligo-dT priming. Directionally
cloned into EcoRi/XhoI sites using the following 5'
adaptor: GGCACGAG(G). Library constructed by Ling Hong
in the laboratory of Gerald M: Rubin (University of
California, Berkeley) using ZAP-cDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies).
Note: this is a NIH_MGC Library."
15 a 313 c 321 g 153 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70 GCGCTCCAGCGTGGGCCTGGCTGTGCAGGCACGAGGTGTCCATCAGAGCG 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84 heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134 euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184 roProThrAlaGluAla.LeuLeuTyrGlyIle.LeuGln.LeuGlnArg 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20 ATGGCGGTGCTGTCAGCTCCTGGCCTGCGCGGCTTCCGGATCCTTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220 GGATGATCTCGTCAACTGGGCCCGCGGAGTTCTCTGTGTGGCCCATGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420 TTGGGAAGGTCTACGACCAGATGCCGGAGCCGCGCTACGTGTCTCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167 lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                570 CACCTACGCCCGAGGCCCTTGCTCTACGCCATTCCTGCAGGTTGCAGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17 uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34 alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51 AlavalAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117 rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length: 216
Gaps: 3
Percent Identity: 97.222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: BG395342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality: 1051.00
Ratio: 5.005
Percent Similarity: 97.222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x BG395342
                                                                                                                                                                                                                                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores
                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indiana.

SM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Manmalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

CE 1 (bases 1 to 1002)

RS NIH-MGC http://mgc.nci.nih.gov/.

NIH-MGC http://mgc.nci.nih.gov/.

AL (npublished (1999)

Contact: Robert Strausberg, Ph.D.

Fmail: cgapbs-rémail.nih.gov

Tissue Procurement: ATCC

cDNA Library Preparation: Ling Hong/Rubin Laboratory

CLone distribution: MGC Clone distribution information can be

found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov

Plate: LLCM11907

High quality sequence stop: 753.

High quality sequence stop: 753.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG395342 1002 bp mRNA EST 12-MAR-2001
602457879F1 NIH_MGC_16 Homo sapiens cDNA clone IMAGE:4580538 5',
                                                                                                                                                                                                                                                                167 lArgGlyCysAspArglleValProValAspileTyrIleProGlyCysP 184
                                                           101 TyraspMetaspArgPheGlyValValPheArgAlaSerProArgGlnSe 117
                                                                                                                                                                                                                                                                                                                                                                                                                   117 rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               358 CGACGTCATGATCGTGGCCGGCACACTCACCAACAAGATGGCCCCAGCGC 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    508 GAGGGGTGCGACCGCATCGTGCCGTGGACATCTACATCCCAGGCTGC. 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184 roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           557 ..cacctaccccagccrccrcrtaccccrcrccrccrccrccrccacacaac 604
                                                                                                                                               uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP 84
                                                                                                                                                                                     208 GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCT
                            51 AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201 IleLysArgGluArgArgLeuGlnIleTrpTyr 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      605 ATCAAGGGGGAGGGGAGGCTGCAGATCTGGTAC 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4580538"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MRNA sequence.
BG395342
BG395342.1 GI:13288790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: gb_est2:BG395342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
```

EST

ORGANISM

KEYWORDS SOURCE

AUTHORS TITLE JOURNAL COMMENT

REFERENCE

DEFINITION

ACCESSION

VERSION

source

FEATURES

29

84

469

```
605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           213 Arg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGG
                                                                                                                                                                                                                                                                              96
                                                                                                                                                                                                                                                                                                                                                                    ISM Homo sapiens

ENKAryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Entaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Entaria; Eutherla; Primates; Catarrhini; Hominidae, Homo.

RS NHF-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

National Institutes of Health, Mammalian Gene Collection (MGC)

National Institutes of Health, Mammalian Gene Collection (MGC)

Entari: Robert Strausberg, Ph.D.

Email: cgapbs-rémail.nih.gov

Tissue Procurement: Arc.CorTD/DTP

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: Incryte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

Plate: LLCM1741 row: g column: 05

High quality sequence stop: 739.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="melanotic melanoma, high MDR (cell line)"
/lab_host="DH10B (phage-resistant)" (ince="Organ: skin; Vector: poTBF; site_1: XhoI; site_2:
EcoRI; cDNA made by oligo-dT priming. Directionally cloned
into EcoRIXNol sites using the following 5 adaptor:
GGCACGAG(G). Size-selected >500bp for average insert size
I.8kb. Library constructed by Ling Hong in the laboratory
of Gerald M. Rubin (University of California, Berkeley)
using ZAP-CDNA synthesis kit (Stratagene) and Superscript
IRT (Life Technologies). Note: this is a NIH_MGC
                                                                                                                                                        seq_documentation_block:
LOCUS BG765790 742 bp mRNA EST 15-MAY-2001
DEFINITION 602739620F1 NIH_MGC_49 Homo sapiens cDNA clone IMAGE:4869532 5',
ACCESSION BG765790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 CGGATCCTTGGTCTGCGCTCCAGCGTGGGCCTGGCTGTGCAGGCACGAGG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46 euProLysAlaArgAlaValAlaProLysProSerSerArgGlyGluTyr 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13 ArgIleLeuGlyLeuArgSerSerValGlyProAlaValGlnAlaArgGl 29
Length: 201
Gaps: 0
Percent Identity: 99.502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .742

/organism="Homo sapiens"

/db_xref="taxon:9606"

/clone="Taxon:9606"

/clone="Taxon:96052"

/clone_lib="NIH_MGC_49"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: BG765790 from: 1 to: 742
                                                                                                                                                                                                                                                                                               BG765790.1 GI:14076443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Library. |"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality: 1049.00
Ratio: 5.245
Percent Similarity: 99.502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-525-867-1 x BG765790
                                                                                                             seq_name: gb_est2:BG765790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                      SOURCE
```

```
APPLICANT: Xu, Jiangchun
APPLICANT: Xu, Jiangchun
APPLICANT: Dillin, Davin C.
TITLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY OF PROSTATE CANCER AND METHOD:
NUMBER OF SEQUENCES: 178
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
36.89
36.89
2.3e+03
4.0e+03
16.66
122.26
122.26
89.99
85.82
128.45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              646 GGTTCCCAAACCCAGNAANCGGGGGAGGAGGATTTGGGGGCCAAGGGGGATG 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               696 ACCGGGGGCCCGAAGGGGGANCCANCTTGCCNNCCAAAGNNAGAGGCGTG 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ........MetThrPheGlyLeuAlaCysCysAlaValGluMetM 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36 ThraspGlyProSerSerThrGlnProAlaLeuProLysAlaArgAlaVa 52
                                                                                                                                                                                                                                                                                                         seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-020-956-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76.00
76.00
76.00
76.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ......AAACTGGGNCCCCCGGAGNTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69 sp.LeuValAsnTrpAlaArgArgSerSerLeuTrpPro......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Identity: 58.201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYZHM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
/cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-832-399-1
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-372-498-1
/cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-846-762-1
/cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-923-137-1
/cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-602-093-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to reverse of: US-09-020-956-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      210121.42702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/09/020,956
FILING DATE: 09-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 27
TELECOMMUNICATION INFORMATION:
TELEPRAN: (206) 622-4900
TELEPRAN: (206) 682-6031
INFORMATION FOR SEQ ID NO: 32:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 789 base pairs TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       411.00
3.067
70.899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       596 ACTITGITG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
CITY: Sec
STATE: WA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-020-956-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 789 !
789 !
4403765
4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4403765
1181
1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1965
80161
80161
1488 !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1488 !
1605 !
2336 !
3480 !
3950 !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2394
                                                                                                                                                                                                                                                                                                                                                                                        -WODEL-frame+_p2n.model -DEV=x1h
-Q-Cgn2_1/USPTO_spool/US99528667/runat_12022002_111927_15623/app_query.fasta_1.272
-Q=Csgn2_1/USPTO_spool/US99528667/runat_12022002_111927_15623/app_query.fasta_1.272
-D=Issued_patents_1.NA -QFMT=fastap -SUFFIX=rni -GAPOP=12.000
-GAPOXT=4.000 -MINMATCH=0.100 -LODOCL=0.000 -LODPEXT=0.000
-QGAPOP=4.500 -QGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-GGAPOP=4.500 -GGAPEXT=1.000 -YGAPOP=10.000 -YGAPEXT=0.500
-GGAPOP=4.500 -GAPEXT=7.000 -START=1 -MATRIX=blosum62
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=pct
-THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFWT=pfs
-NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000
-USBR=US09925867_eCGAL_1.75 -NOPU=6 -ICOPE3 -LONGLOG
-DEV_TIMEOUT=120 -WARL_TIMEOUT=30 -NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    927
960
2965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80.50 120.46 46.44 80.50 120.46 46.44 80.50 119.05 55.64 80.50 119.05 55.64 80.50 120.46 40.40 80.60 123.64 30.88 20.00 123.64 30.88 20.00 123.64 30.88 20.00 123.64 30.88 20.00 120.60 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10.46 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.0e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Documentation 411.00 783.54 411.00 783.54 251.00 374.56 247.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.43 01.00 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40 160.40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82.50 128.81 18
80.50 120.46 46
80.50 119.05 55
80.50 86.76 3
          out_format : pfs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-020-956-32 - 410:00 783
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-020-956-32 - 411:00 783
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-030-607-32 - 411:00 783
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-103-440-1 + 247:00 374
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-498-599-7 + 101:00 160.
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-498-599-7 + 101:00 160.
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-138-2526 - 86.50 138
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-363-598-1 + 86.00 96.
/cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-363-574-3 + 84.50 137.
/cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-557-184-4 + 82.50 137.
                                                                                                                                                                                                    software, version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6/ptodata/2/ina/5B_COMB.seq:US-08-743-637B-166+6/ptodata/2/ina/6A_COMB.seq:US-08-526-840B-166+6/ptodata/2/ina/6A_COMB.seq:US-09-036-987A-1-6/ptodata/2/ina/6B_COMB.seq:US-09-03-700-70-1-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12_6/ptodata/2/ina/5A_COMB. seq.(US-00-577-184-5 + 812_6/ptodata/2/ina/5A_COMB. seq.(US-00-577-184-5 + 812_6/ptodata/2/ina/6B_COMB. seq.(US-00-226-012-1 - 812_6/ptodata/2/ina/6B_COMB. seq.(US-00-443-501A-2 - 12_6/ptodata/2/ina/6B_COMB. seq.(US-00-271-815-1 + 812_6/ptodata/2/ina/6B_COMB. seq.(US-09-103-840A-2 - 12_6/ptodata/2/ina/5B_COMB. seq.(US-09-103-840A-2 - 12_6/ptodata/2/ina/5B_COMB. seq.(US-09-231-2402 + 12_6/ptodata/2/ina/5B_COMB. seq.(US-09-231-2402 + 12_6/ptodata/2/ina/5B_COMB. seq.(US-09-231-2402 + 12_6/ptodata/2/ina/5B_COMB. seq.(US-09-231-2402 + 12_6/ptodata/2/ina/6B_COMB. seq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ptodata/2/ina/5A_COMB.seq:US-08-390-878-16 + 
ptodata/2/ina/6A_COMB.seq:US-08-651-136C-3 + 
ptodata/2/ina/6A_COMB.seq:US-08-651-136C-5 +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ptodata/2/ina/6A_COMB.seq:US-08-651-136C-1
ptodata/2/ina/6A_COMB.seq:US-08-906-360-3-
ptodata/2/ina/5B_COMB.seq:US-08-620-694A-1
ptodata/2/ina/6A_COMB.seq:US-09-022-255-1
     to: Issued_Patents_NA:*
                                                                                                                                                                                                    Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database: Issued_Patents_NA:*
Database sequences: 331203
Database length: 113238999
Search time (sec): 39.010000
                                                                                               Date: Feb 12, 2002 7:32 PM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Search information block:
                                                                                                                                                                                                                                                                                                                                                   Command line parameters:
OM Of: US-09-525-867-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query: US-09-525-867-1
Query length: 213
                                                                                                                                                                                                    About: Results
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cgn2_
```

```
Sequence 2, Application US/09103840A
Patent No. 6294328
GENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: FRABER, Claire M.
APPLICANT: VENTER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
                                                                                                                                                                                                                                                                                                           to: 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94 etHisMetAlaAla.ProArgTyrAspMetAspArg.PheGlyValValP 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110 heArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeu 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              143 uProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrT 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               177 AspileTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrGl 193
                                                                                                                                                                                                                                                                                                                                                                                        596 ACTITGITG..........AAACIGGGNCCCCCGGAGNIII 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  414 ACCAAAAAGAGGGCCCCAGNGTTTGC.AAGGTTTAAGACCAGATGCCGGA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36 ThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgAlaVa 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                           52 lAlaProLysProSerSerArgGlyGluTyrValValAlaLysLeuAspA 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82 .......MetThrPheGlyLeuAlaCysCysAlaValGluMetM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         127 ThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          646 GGTTCCCAAACCCAGNAANCGGGGGGGGGGTTTTGGGGGGCCCAAGGGGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69 sp.LeuValAsnTrpAlaArgArgSerSerLeuTrpPro......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160 yrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    266 GAAATTNAAATCCCAGGGTGCCCACCNANGGCCGAGGCCCTGTTTANGG
                                                                                                                                                                                                                                                                                                           Align seg 1/1 to reverse of: US-09-030-607-32 from: 1
                                                                                                                                                                                    Percent Identity: 58.201
                                                                                                                                                                                                                              alignment_block: US-09-030-607-32/rev US-09-525-867-1 x US-09-030-607-32/rev
                                                                                                                                                         3.067
70.899
                                                                                                                                 411.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      210 rpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     166 GGTACCGCAGG 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
                                                                                                                                 Quality:
Ratio:
                                                                                                                                                                            Percent Similarity:
       ; MOLECULE TYPE:
US-09-030-607-32
                                                                                                          alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Xu, Jiangchun APPLICANT: Xu, Jiangchun APPLICANT: Dillon, Davin C. TITLE OF INVENTION: COMPOUNDS FOR IMMUNOTHERAPY OF PROSTATE CANCER AND METHODS FO CORRESPONDENCES. 224
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                 143 uProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrT 160
                                                                                                                                                                                                                                                                                                                                                                                   yrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVal 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                177 AspileTyrileProGlyCysProProThralaGluAlaLeuLeuTyrGl 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GARATINAAATCCCAGGGTGCCCACCNANGGCCGAGGCCCTGTTTTANGG 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       193 yIleLeuGlnLeuGlnArgLysIleLysArgGluArgArgLeuGlnIleT 210
564 TTTGNGGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGA 515
                                                  94 etHisMetAlaAla.ProArgTyrAspMetAspArg.PheGlyValValP 110
                                                                                                  514 TGNANATNGCAGCAACCCGNNAAGACATGGNCCGGTTTTGGGGGNGNTTT 465
                                                                                                                                                                                                                                                 127 ThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGl 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-030-607-32
                                                                                                                                                 110 heArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ...., nekapy
STREET: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
STATE: WA
COUNTRY: USA
ZIP: 98104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READBALE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATE:
APPLICATION NUMBER: US/09/030,607
FILING DATE: 25-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATORNEY/AGENT INFORMATION:
NAME: MAKI, DAVIG J.
REGISTRATION NUMBER: 31,392
REGISTRATION NUMBER: 210121.427C3
REFERENCE/DOCKET NUMBER: 210121.427C3
TELECOMMUTCATION INFORMATION:
TELEPRONE: (206) 632-4900
TELEPRONE: (206) 632-4900
INFORMATION FOR SEQ ID No: 32:
SEQUENCE CHRARACTERISTICS:
LENGTH: 789 base pairs
INFORMATION FOR SEQ ID NO: 32:
SEQUENCE CHRARACTERISTICS:
LENGTH: 789 base pairs
TYPE: nucleic acid
STRANBENESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
Sequence 32, Application US/09030607
Patent No. 626245
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166 GGTACCGCAGG 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      210
```

```
449.00
3.054
66.818
                                                                                                                                                                                3507989ACGCGCTATC 3507998
                                                                                                                                      204 uArgArgLeu 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores
                                                                                                                                                                                                                   FEATURE:
OTHER INFORMATION: CDC 1551
OTHER INFORMATION: "n" bases at various positions throughout the sequence
OTHER INFORMATION: represent a, t, c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3507692GGCCACGCCGGGCAGGCAGATCTGATGGTGGGGGGCGGGTCAGCC 3507741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .........GGCGGGAT 3507541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3507792AAATGGGTTCTGGCCATGGGTGTGTGCGCCTCGTCAGGTGGATGTTCAA 3507841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ....CTGGAAGAACAG 3507527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3507542CCTGCTGCTGCTCGAGAAGGTGGCGGGCTATGTCCGCAAAACTCCC 3507591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3507642ACCGCGGGACCAAGGTTTGACATTGCGCGGTTCGGGATGGAACGGTTCTC 3507691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161 sTyrSerTyrSerValValArgGlyCysAspArgIleValProValAspI 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    111 gAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeuThrA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145 ArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHi 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96 MetalaAlaProArgTyrAspMetAspArgPheGlyValVal...PheAr 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128 snLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGluPro 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 .....LeuGlyLeuArgSerSerValGlyProAlaValGlnAlaArgG 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29 lyValHisGlnSerValAlaThrAspGlyProSerSerThrGlnProAla 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62 rValValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgSerSerL 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79 euTrpProMetThrPheGlyLeuAlaCysCysAlaValGluMetMetHis 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46 LeuProLysAlaArgAlaValAlaProLysProSerSerArgGlyGluTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to: 4403765
                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps: 6
Percent Identity: 41.818
                                                                                                                                                                                                                                                                                                                                                                                                      Length:
TITLE OF INVENTION: TUBERCULOSIS
FILE REFREENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTHARE: PATENTIN VET: 2.1
SEQ ID NO 2
LENGTH: 4403765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 LeuSerAlaProGlyLeuArgGlyPheArglle.
                                                                                                                                                                           TYPE: DNA ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3507485GCCTGACGTGGGATTGAGGTAGGGCGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3507528CTGCCC.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_block:
US-09-525-867-1 x US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                 449.00
3.054
66.818
                                                                                                                                                                                                                                                                                                                                                                                                 Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3507516.....
```

```
Sequence Learner Languages:
Sequence 1, Application US/09103840A
Patent No. 6294328
GENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
APPLICANT: FRASER, Claire M.
APPLICANT: FRASER, Claire M.
APPLICANT: PERMER, John S.
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT APPLICATION NUMBER: US/09/103,840A
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PATENT NOS: 2
SEQ ID NO 1
LENGTH: 4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3507939CTGAAGCTGCACGAAAAGATTCAGCAGATGCCATTAGGTATCAACCGGGA 3507988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3512106CCTGCTGTCGACCGTCGAGAAGTGGCGGGCTATGTCGCAAAAACTCCC 3512155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3507889TCTACCTACCCGGCTGCCCGCCGCGCGGAGATGCTGCTGCACGCAATC 3507938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3512156TGTGGCCGCCAACATTCGGATTGGCGTGCTGTGCGATCGAGATGATGGCG 3512205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96 MetalaalaProargTyraspMetAspargPheGlyValVal...PheAr 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 rValValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgSerSerL 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79 euTrpProMetThrPheGlyLeuAlaCysCysAlaValGluMetMetHis 95
                                                                                                                                                                                                                                                                               seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 .....LeuGlyLeuArgSerSerValGlyProAlaValGlnAlaArgG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 lyValHisGlnSerValAlaThrAspGlyProSerSerThrGlnProAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46 LeuProLysAlaArgAlaValAlaProLysProSerSerArgGlyGluTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to: 4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 220
Gaps: 6
Percent Identity: 41.818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to: US-09-103-840A-1 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 LeuSerAlaProGlyLeuArgGlyPheArgIle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: DNA
; ORGANISM: Mycobacterium tuberculosis
; OTHER INFORMATION: H37Rv
US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3512049GCCTGACGTGGGATTGAGGTAGGGCGTGGGA
                                                     195 LeuGlnLeuGlnArgLysIleLys.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-525-867-1 x US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3512092CTGCCC.....
```

us-09-525-867-1.rni

US-08-801-344-7

```
1046 GGTGTTGCAGGTCTGGCCGCCATTGGCGCAGCAAACAGTCTCGGCGCGAT 1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||||||:::|||||| ||| :::
1150 CGCGGAATTCCTCGAGCTGGATTTTAAAGAGGAAGCTGGCAGCGGCGATG 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1247 ......crctitgccgcccaggcaaaagaggrcgatatcatrgrcac 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1288 CACCGCGCTTATTCCAGGCAAACCAGGGCGAAGCTAATTACCGGTGAAA 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1338 IGGIIGACICCAIGAAGGCGGGCAGIGIGAIIGICGACCIG...GCAGCC 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .......AACTG 1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1402 TGAATACACCGTGCCGGGTGAATCTTCACTACGGAAAATGGTGTCAAAG 1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             :::|||||||||
1452 TGATTGGTTATACCGATCTTCCGGGCCGTCTGCCGACGCAATCCTCACAG 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154 AlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValValArgGlyCy 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170 sAspArgIleValProValAspIleTyr......179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90 AlaVal..GluMetMetHisMetAlaAlaProArgTyrAspMetAspArg 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137 alTyrAspGlnMetProGluProArgTyrValValSerMetGlySerCys 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    191 LeuTyrGly.....IleLeuGlnLeuGlnArgLysIleLysArgGluAr 205
                                                                                                                                                                                                                                                                                                                                                                                           24 aValGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerS 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41 erThrGlnProAlaLeuProLysAlaArgAlaValAlaProLysProSer 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58 Ser. ArgGlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpA 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74 laArgArgSerSerLeuTrpProMetThrPheGlyLeuAlaCysCys... 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106 PheGlyvalValPheArgAlaSerProArgGlnSerAspValMetIleVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122 lalaGlyThrLeuThrAsnLySMetAlaProAlaLeu.....ArgLysV
                                                                                                                                                                                                                                                                             8 GlyLeuArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyProAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180 .....IleProGlyCysProProThrAlaGluAlaLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-498-599-7
                                                                                Percent Identity: 22.477
                                                                                                                                                                                                                     Align seg 1/1 to: US-08-801-344-7 from: 1 to: 3524
                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
    Sequence 7, Application US/09498599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1385 CAAAACGCCGCC....
                                                                                                                                  alignment_block:
US-09-525-867-1 x US-08-801-344-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1124 GTGAAAGAACAAGTTCAAAGTA
                       101.00
                                                                                47.706
                    Quality:
Ratio:
                                                                             Percent Similarity:
alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1552 A 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               205 9 205
                                                                                                                                                                                                                                                                                                                                                                                                                                           1096 TGTG.
```

```
1046 GGTGTTGCAGGTCTGGCCGCCATTGGCGCAGCAAAACAGTCTCGGCGCGAT 1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1096 IGIG...... 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1124 GTGAAAGAACAAGTTCAAAGTA.....TGGG 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41 erThrGlnProAlaLeuProLysAlaArgAlaValAlaProLysProSer 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58 Ser. ArgGlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpA 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 GlyLeuArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyProAl 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24 aValGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerS 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGINAL SOURCE: ORGANISM: Pyridine nucleotide transhydrogenase gene
                                                                                                                                                                                                                                                                                                           COUNTRY: U.S.A.

COUNTRY: U.S.A.

ZIP: 53717-1914

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/09/498,599
FILING DATE:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Cameron, Douglas C.
APPLICANT: Shaw, Anita J.
APPLICANT: Shaw, Anita J.
TITLE OF INVENTION: MCROBEAL PRODUCTION OF
TITLE OF INVENTION: 1,2-PROPANEDIOL FROM SUGAR
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: DeWitt Ross & Stevens S.C.
STREET: Madison
CITY: Madison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps: 11
Percent Identity: 22.477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: US-09-498-599-7 from: 1 to: 3524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DAIL.
CLASTIFICATION:
ATTONNEY/GAGENT INFORMATION:
NAME: SAZA, Charles S.
REFRERNCE/DOCKET NUMBER: 09820.037
TELECOMMUNICATION INFORMATION:
TELEPRAN: 608-831-2100
I TELEPRAN: 608-831-2106
I INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 3524 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_block:
US-09-525-867-1 x US-09-498-599-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores;
Quality: 101.00
Ratio: 0.971
Percent Similarity: 47.706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-498-599-7
```

seq_documentation_block:

| Sequence 26, Application Us/09178252 |
| Sequence 26, Application Us/09178252 |
| Patent No. C218188 |
| GENERAL INFORMATION: |
| APPLICANT: Cardineau, Guy A. |
| APPLICANT: Stelman, 1200 GCTATGCCAAAGTGATGTCGGACGCGTTCATCAAAGCGGAAATGGAA... 1246 1247crcttrgcccccaggcaaaagaggrcgaratgtcac 1287 288 CACCGCGCTTATTCCAGGCAAACCAGCGCCGAAGCTAATTACCCGTGAAA 1337 :: |||:::|||
1338 TGGTTGACTCCATGAAGGCGGGCAGTGTGATTGTCGACCTG...GCAGCC 1384AACTG 1401 1452 IGATIGGITATACCGATCTTCCGGGCCGTCTGCCGACGCAATCCTCACAG 1501 1502 CITTACGGCACAAACCTCGTTAATCTGCTGAAACTGTTGTGCAAAGAGAA 1551 90 AlaVal..GluMetMetHisMetAlaAlaProArgTyrAspMetAspArg 105 137 alTyrAspGlnMetProGluProArgTyrValValSerMetGlySerCys 153 180IleProGlyCysProProThrAlaGluAlaLeu 190 seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-178-252-26 122 lAlaGlyThrLeuThrAsnLysMetAlaProAlaLeu.....ArgLysV 154 AlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValValArgGlyCy 191 LeufyrGly.....IleLeuGlnLeuGlnArgLysIleLysArgGluAr 106 PheGlyValValPheArgAlaSerProArgGlnSerAspValMetIleVa Gaps: 8 Percent Identity: 26.500 170 sAspArgIleValProValAspIleTyr.....) OTHER INFORMATION: Synthetic B.t. toxin gene US-09-178-252-26 Length: 1385 CAAAACGGCGGC........ TYPE: DNA ORGANISM: Artificial Sequence 86.50 0.911 47.500 Ratio: Percent Similarity: Quality: SEQ ID NO 26 LENGTH: 1965 alignment_scores 1552 A 1552 205 g 205 FEATURE

```
6602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6530 receaeccercercercercadeaceccecaresces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5626 GCGTACGGATGCCAATATCCGGTCCTTGGCATCCGGCACCATCTCAGTAG 6675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5796 GATGCCCGTGGCGAATCGCGTTATGACGTCCCAGGGGGACAGTGTGCTGT 6845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106 PheGlyValValPheArg.AlaSerProArgGlnSerAspValMetIleV 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .....TTCGCGCCTTGCCTTCAGGAGATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139 AspGlnMetProGluProArgTyrValValSerMetGlySerCysAlaAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6480 cerecarrececececesesarcesaserreaseseserrecases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26 nAla...ArgGlyValHisGlnSerValAlaThrAspGlyProSerSerT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 ArgGlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75 gArgSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5676 CGGTAGCGCAAGTGTCGTCACACGAAGTCACTCTGGCGCGCCCTTTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5726 AGCGCTCTGGTTTTCCGGCTCTGCAGCCACGACGATCAGTC.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 alAlaGlyThrLeuThrAsnLySMetAlaProAlaLeuArgLySValTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 ArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyProAlaValGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .........GATICCIGITCGCGGTGGTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42 hrGlnProAlaLeuProLysAlaArgAlaValAlaProLysProSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5580 TCGATCCAGCCACGAAGGTCGGG...........
COMPUTER FRADABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER ENDABLE FORM:

COMPUTER ENDABLE FORM:

COMPOTER: The PC compatible
COMPOTER: PatentIn Release #1.0, Version #1.30

CURRENT APPLICATION DARA:

APPLICATION NUMBER: US/09/036,987A

FILING DATE: 09-MAR-1998

CLASSIFICATION: 435

ATTORNEY AGENT INDORMATION:

NAME: Stuart, Donald R

REFERENCE/POCKET NUMBER: 50,608

TELEPHONE: (317)337-4816

TELEPHONE: (317)337-4816

TELEPHONE: (317)337-4816

TELEPHONE: (317)337-4816

TELEPHONE: (317)337-4816

SEQUENCE CHARACIERISTICS:

SEQUENCE CHARACIERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1 to: 80161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92 luMetMetHisMetAlaAlaProArgTyrAspMetAspArg.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length: 216
Gaps: 9
Percent Identity: 22.685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: US-09-036-987A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-525-867-1 x US-09-036-987A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DNA (genomic) US-09-036-987A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 80161 base pairs
nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86.00
0.796
50.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5603
```

155 nGlyGlyGlyTyrTyrHisTyrSerTyrSerValValArgGlyCys. 170
171AspargileValProValAspileTyrile 180 ::: ::::: :::! 6896 GGACAGCGAGCAAGAAGCGCTCATTGACTCAGAAATCCTCGATCTA 6945
181 ProGlyCysProProThrAlaGluAlaLeuLeuTyrGlylleLeu 195
196 .GlnLeuGlnArgLyslleLysArgGluArgArgLeuGlnIleTrp 210 ::: ::: ::: :::
seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-370-700-1
seq_documentation_block: Sequence 1, Application US/09370700 Patent No. 674350: GENERAL INFORMATION: APPLICANT: Baltz, Richard H APPLICANT: Broughton, Mary C APPLICANT: Crawford, Kathryn P APPLICANT: Manduri, Krishnamurthy
APPLICANT: Treadway, Fatti J APPLICANT: Waldron, Jan R TITLE OF INVENTION: Blosynthetic Genes For Spinosyn Insecticide TITLE OF INVENTION: Blosynthetic Genes For Spinosyn Insecticide
TILE REFERENCE 30409 DIVI CURRENT APPLICATION NUMBER: US/09/370,700 CURRENT FILING DATE: 1999-08-09 EARLIER APPLICATION NUMBER: US 09/36987 EARLIER FILING DATE: 1998-03-09 NUMBER OF SEQ ID NOS: 39
0161 Sac -1
alignment_scores: Quality: 86.00 Length: 216 Ratio: 0.796 Gaps: 9 Percent Similarity: 50.000 Percent Identity: 22.685
alignment_block: US-09-525-867-1 x US-09-370-700-1
Align seg 1/1 to: US-09-370-700-1 from: 1 to: 80161
10 ArgGlyPheArglleLeuGlyLeuArgSerSerValGlyProAlaValGl 26 ::: :::::
26 nAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerSerT 42 :
42 hrGlnProAlaLeuProLysAlaArgAlaValAlaProLysProSerSer 58 :::: ::: 6580 TCGATCCAGCACGAGTCGGG
59 ArgGlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAlaAr 75
75 gArgSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValG 92

us-09-525-867-1.rni

	81 16 96		ω	Serse 41 ::: AACTC 245	roser 57 Carca 295	61 Grcrc 345	Valh 72 CTIGTT 395	SerSerleu 79: :::::: GATCCGCTAIT 445	.thisme 96 :: 1: 480	gAlas 113 TCCTT 530	euThr 127 GCACT 577	9Lys. 136 : AGCAC 627	143 AAGAC 677	AlaAs 155 : CGTTC 727	169 TGGAT 756	171	TTGTT 806	ValPr 175
LENGTH: 1488 base pairs TYPE: nucleic acid TYPE: nucleic acid TOPOLOGY: linear MOLECULE TYPE: DNA (genomic) US-08-834-655-3	alignment_scores: Quality: 84.50 Length: 2 Ratio: 0.741 Gaps: Percent Similarity: 40.569 Percent Identity: 20.9	alignment_block: US-09-525-867-1 x US-08-834-655-3	Align seg 1/1 to: US-08-834-655-3 from: 1 to: 148	25 ValGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerSe :::::: :::: ::::	41 rThrGlnProAlaLeuProLys.AlaArgAlaValAlaProLysProSer ::::: :::::	58 SerargGlyGlu	62 .TyrValValAlaLysLeuAspAspLeuValA	72 snTrpalaargargserSerLeu ::111 11 11 11 11 1396 CCTGGCTGCGACCCAGATGGACATTGAGAATCCTTGATGATGGCTATTTGAGAATCCTTGATGGCTATTTGAGAATCCTTGATGTATTGAGAATCCTTGATGTATTGAGAATCCTTGATGTATTGAGAATCCTTGATGTATTGAGAATCCTTGATTGA	80 TrpProMetThrPheGlyLeuAlacysCysAlaValGluMetMetHisMe	96 talaalaproargTyraspWetaspargPheGlyValValPheargAlaS ::: 481 GTCTGCACCGGTGTCTGGGTGCTGGCTACGAGTGTGGTCATCAGTCTT	113 erProArgGinSerAspValMetileValAlaGlyThrLeuThr 	128 .AsniysMetalaproalaleuargiys. ::: :::: 578 CGAIGCTTIGGTCCCTACCACTCCTGGAGAATCTCGCACTCGAAGCAC	137Vallyraspglnmetbroglu	144ProArgTyrValValValSerMetGlySerCysAlaA	155 nGlyGlyGlyTyrHisTyrSerTyrSerValValArgGly : ::: 728 AGGAGGAGACATGTCCGTGGAT	170	7 GAGGAGGCTCCCATTGTGACTTTGTTCTGGATGGTGA	172ArgileValPr ::: 807 CGGAIGGCCCGCGRACCTGATTATGAACGCCTCTGGCCAAGACTACGGCC

COMPUTER: ISAN FOR COMPATIBLE COMPUTER: TAN FOR COMPATIBLE COMPATIST: TAN FOR COMPATIBLE COMPATIST: TAN FOR COMPATIBLE COMPATION SYSTEM: PC-COS/MS-COS CURRENT APPLICATION DATA: PLINKO DATE: 11-APR-1997 CLASSIFICATION NUMBER: 080/651 REGISTRATION NUMBER: 08,651 REGISTRATION NUMBER: 08,651 REFERENCE/DOCKET NUMBER: CGAB-300.USA TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 433-4150 TELEPHONE: (415) 433-4150 TELEPHONE: (415) 433-4150 TELEPHONE: (415) 433-416 TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 433-416 TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 433-416 TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 433-416 TELEPHONE: (415) 433-416 TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 433-416 TELEPHONE: (415) 4	TCGACATTAT TCGACATTAT IUAIaLeuLe TCTACATTAT TCTACATTAT TCTACCATTAT TCTACATTAT TCTACATTAT TCTACATTAT TTTACATTAT TTTACATTAT TTTACATTAT TTTACATTAT TTTACATTAT TTTACATTAT TTTACATTACAT TTTACATTACAT TTTACATTACAT TTTACAT TTTAC
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

7 061	AICGAIGCGGITIGACCCCAGGGICAIAICAGCACCICGGCCCCAAACIC 245	
41 1	TThrGlnProAlaLeuProLys.AlaArgAlaValAlaProLysProSer 57	
246	GECCAAGCCTGCGTTCGAGCGCAACTACCAGCTCCCCGAGTTCACCATCA 295	
58 8 296 A	Serarg6lyGlu	
62 .	Tyrvalvalalatysteuaspaspteuvala 72 :::: CGTGGTCTCTGCCACGTTGCCATCGATTGGGCGTCGCTCTTGTT 395	
72 s 396 c	SentrpalaargargserSerLeu 79 ::	
80 1 446 1	TrpProMetThrPheGlyLeualaCysCysalaValGluMetMetHisMe 96 ::	
96 t 3 481 G	tAlaalaproargTyraspMetaspargPheGlyValValPheargAlas 113 :::: GTCTGCACCGGTGTCTGGGTGTGGTGTGGTCATCAGTCTTGTT 530	
113 e 531 C	erProkrgGlnSerAspValMetlleValAlaGlyThrLeuThr 127 	
128 . 578 C	AsniysWetalaPro	
137 . 628 C	ValtyraspglnMetProglu	
144 .	ProArgTyrValValSerMetGlySerCysalaas 155 ::::::: ::: :: ccGCTCCCAGGTTGGCTTGCCTCCAAGGAGAACGCTGCTGCTGCTGCTTC 727	
155 r 728 A	nGlyGlyGlyGlyTyrHisTyrSerTyrSerValValArgGly 169 ::: AGGAGGAGGACATGTCCGTGCACCTGGAT 756	
170 .	GAGGAGGCICCCATIGIGACTITGTICIGGAIGGIGAYCCAGIICTIGII 806	
172 . 807 C	CGGATGGCCCGCGTACCTGATTATGAACGCCTCTGGCCAAGACTACGGCC 856	
175 c 1 857 d	oValaspileTyrilePro	
182 . 907 T	TITICGACATIATATCTCGGACCTCGGTGTGTGGCTGCCCTCGGTGC 956	
187 # 957 C	AlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArg 199 ::: ::::::::::::::::::::::::::::::	
sed_name:	/cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-363-574-3	
sed_docume; Sequence; Patent N; GENERAI; APPLI	_documentation_block: equence 3, Application US/09363574 atent No. 6136574 GENERAL INFORMATION: APPLICANT: KNUTZON, DEBORAH	

```
APPLICANT: MURKERJI, PRADIP
APPLICANT: HUANG, YUNG-SHENG
APPLICANT: HUANG, YUNG-SHENG
APPLICANT: HUANG, YUNG-SHENG
APPLICANT: CHAUDHARY, JENNITER
APPLICANT: CHAUDHARY, SUNITA
TILE OF INVENTION: METHODS AND COMPOSITIONS FOR SYNTHESIS
TITLE OF INVENTION: OF LONG CHAIN POLY-UNSATURATED FATTY ACIDS IN PLANTS
NUMBER OF SOUGHNES: 18
CORRESONDENCE ADDRESS:
ADDRESSEE: LIMBACH AND LIMBACH L.L.P.
STREET: 2001 FERRY BUILDING
CITY: SAN FRANCISCO
STATE: CA
COUNTRY: USA
ZIP: 94111
COMPUTER READABLE FORM:
MEDIUM TYPES: Floppy disk
COMPUTER READABLE FORM:
MEDIUM TYPES: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PREDENT Release #1.0, Version #1.30
CURRENT APPLICATION DATA:: US/09/363,574
FILING DATE:
CLASSIFICATION:
REGISTRATION NUMBER: 38,651
REGISTRATION NUMBER: 38,651
RESPERRUE/CONCET WURBER: CGAB-202 USA
TELECOMMUNICATION INPORMATION:
TELEPRAN: (415) 433-4150
TELEPRAN: AARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246 GGCCAAGCCTGCCTTCGAGCGCAACTACCAGCTCCCCGAGTTCACCATCA 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                396 CCTGGCTGCGACCCAGATCGACAAGTTTGAGAATCCCTTGATCCGCTATT 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196 ATCGATGCCGGTTTGACCCAGCGTCATATCAGCACCTCGGCCCCAAACTC 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    296 AGGAGATCCGAGAGTGCATCCCTGCCCACTGCTTTGAGCGCTCCGGTCTC 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25 ValGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProSerSe 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41 rThrGlnProAlaLeuProLys.AlaArgAlaValAlaProLysProSer 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72 snTrpAlaArgArg.....SerSerLeu 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58 SerArgGlyGlu......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps: 16
Percent Identity: 20.996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to: US-09-363-574-3 from: 1 to: 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS: LENGTH: 1488 base pairs TYPE: nucleic acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-525-867-1 x US-09-363-574-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
US-09-363-574-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84.50
0.741
40.569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
   Quality:
   Ratio: (
   Percent Similarity:
```

```
1127 GTCGTCAGTGCGCCTACCGCAAGATCGGCGAAGCCGCGAAACACGTGATC 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1227 CACTCTGCAGGACGAGGACTTGGAGAGGAGGAGGTTGCCACCATCG 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         992 coceccaraccecegageaagccagreececaagreeacerreerer 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1042 GGCATGACGCACGAGGTCCAAACGCCCATGGCCGTTATCGTCGGATTCAG 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1177 recergeregaegaegreteregararagecaagaregaageeggegerar 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134 LeuArgLysValTyrAspGlnMetProGluProArgTyrValValSerMe 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88 CysCysAlaValGluMetMetHisMetAlaAlaProArgTyrAspMetAs 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 leValAlaGlyThrLeuThrAsn......LysMetAlaProAla 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       842 ccedaderceregarrecegrecacerereacegegrargreade 891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      942 GCGCCTGGCCGCCGAACGCGCCCGCGAGGAACAACTCGAGGCCGAGGTTG 991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                104 pArgPheGlyValValPheArgAlaSerProArgGlnSerAspValMetI 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23 oAlaValGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProS 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40 erSer....ThrGln 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .........ArgGlyGluTyrValValAlaLysLeuAspAspLeuV 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44 ProAlaLeuProLysAlaArgAlaValAlaProLysProSerSer.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 ProGlyLeuArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyPr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           892 ACGGAGCGGGAGTTCATGGGATTCAGCGTCCATGTCCTGGACATCTCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71 alAsnTrpAlaArgArgSerSerLeuTrpProMetThrPheGlyLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Identity: 20.988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: US-08-577-184-4 from: 1 to: 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: RHODOCOCCUS ERYTHROPOLIS
                                                                 6-337652
CLASSIFICATION: 435
PRICR APPLICATION DATA:
APPLICATION NUMBER:
ELING DATE: 28-DEC-1934
ATORNEY/AGENT INFORMATION:
NAME: OBLON, NORMAN F.
REGISTRATION NUMBER: 241-
TELECHONICATION INFORMATION:
TELECHONE: 703-413-3000
TELECHONE: 703-413-2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x US-08-577-184-4
                                                                                                                                                                                                                                                                                                                                                                          1605 base pairs
                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 1605 base pair
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41.975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; STRAIN: SK92
US-08-577-184-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores
```

us-09-525-867-1.rni

50 tGly	197 euglnArgLysIleLysArgGluArgArg 206 11488 GGCCCGGGACTACCAGCGACGACGA 1516 seq_name: /cgn2_6/ptcdata/2/ina/5A_COMB.seq:US-08-577-184-5 seq_documentation_block:	APPLICANT: MIZUMURA, YORIE APPLICANT: YU, FUJIO TITLE OF INVENTION: A REGULATORY FACTOR FOR EXPRESSION OF TITLE OF INVENTION: A REGULATORY FACTOR FOR THEREOF TITLE OF INVENTION: NITRILASE GENE AND A GENE THEREOF NUMBER OF SEQUENCES: 7 CORRESPONDENCE ADDRESS: ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, ADDRESSEE: P.C. STREET: 1755 S. JEFFERSON DAVIS HIGHWAY, SUITE 400 CITY: ARLINGTON STATE: VA		NAME: REGIST REGIST RECOMM LECOMM TELEPA TEL
---------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

alignment_scores:

1623 ACGGAGCGGGAGTTCATGGGATTCAGCGTCCATGTCCTGGACATCTCCGA 1672 111 ::: 111 ::: 111:::
2008 TGGAGA.....TGCTCGAGCCCATCGCCCGTGACCGTGACCGTGAC 1673 GCGCCTGGCCGCCGAACGCGCCCGCGAGGAACAACTCGAGGCCGAGGTTG 1722 1823 TGAGCTACTCGAGACGC.....TGG.....ACCTGGATGAAGAAC 1857 1958 CACTCIGCAGGACGAAGACAICGAACGACGAAGAAGAIGCCACCAICG 2007 2119 TGCTGCTCCAACATCGTCTCCAACGGGATCAAGTACAATCGGCTCGGTGGT 2168 2169 GTCGTCGACCCCCCAACAGGATCAGGGCTGCTCGTCCGCGTCAGACGAG 2218 1773 GGCATGACGCACGAGGTCCAAACGCCCATGGCCGTTATCGTCGGATTCAG 1822 1908 TCCCTGGTCGACGATCTCGATATAGCCAAGATCGAAGCCGGCGCTAT 1957 1858 GTCGTCAGTGCGCCTACCGCAAGATCGGCGAAGCCGCGAAACACGTGATC 1907 88 CysCysAlaValGluMetMetHisMetAlaAlaProArgTyrAspMetAs 104 104 pArgPheGlyValValPheArgAlaSerProArgGlnSerAspValMetI 121 121 leValAlaGlyThrLeuThrAsn......LysMetAlaProAla 133SerCysAlaAsnG 156 134 LeuArgLysValTyrAspGlnMetProGluProArgTyrValValSerMe 150 156 lyGlyGlyTyrTyrHisTyrSerTyrSerValValArgGlyCysAspArg 172 180 eProGlyCysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnL 197 23 oAlaValGlnAlaArgGlyValHisGlnSerValAlaThrAspGlyProS 40 40 erSer....ThrGln 43 7 ProGlyLeuArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyPr 23 59ArgGlyGluTyrValValAlaLysLeuAspAspLeuV 71 71 alAsnTrpAlaArgArgSerSerLeuTrpProMetThrPheGlyLeuAla 87 44 ProAlaLeuProLysAlaArgAlaValAlaProLysProSerSer.... seg_name: /cgn2_6/ptodata/2/ina/6B_COMB.seg:US-09-226-012-1 Length: 243 Gaps: 9 Percent Identity: 20.988 to: 2336 from: 1 2219 GGCCCCGGACTACCCAGCGACGACGA 2247 197 euGlnArgLysIleLysArgGluArgArg 206 seq_documentation_block:
 Sequence 1, Application US/09226012 Align seg 1/1 to: US-08-577-184-5 alignment_block: US-09-525-867-1 x US-08-577-184-5 82.50 0.809 41.975 Quality: Ratio: Percent Similarity: 150 tGly.....

```
APPLICANT: Keating, Mark T.
APPLICANT: Splawski, 1907.
APPLICANTON: WITATIONS IN AND GENOMIC STRUCTURE OF HERG - A LONG OT TITLE OF INVENTION: SYNDROME GENE
TITLE OF INVENTION: SYNDROME GENE
FILE REFERENCE: 233-136
CURRENT FILING DATE: 1999-01-06
EARLIER APPLICATION NUMBER: 09/122,847
EARLIER APPLICATION NUMBER: 09/122,847
EARLIER FILING DATE: 198-07-27
NUMBER OF SEQ ID NOS: 116
SOFTWARE: PALENTH VET. 2.0
SEQ ID NO 1
LEMOTH: 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to reverse of: US-09-226-012-1 from: 1 to: 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2313 ATGCACCAGTGTCCCCTGGCGGTGCATGTGTGTGTTTG......A 2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2272 ACTICATGGCCAGGGCCGGAAGGCAGCCCTTGGTGGCCCCTCGGAAGGGT 2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2172 CAGGCACTCAGGGAAGCCCTTCAGCACCGCGTTCATGTCGATGCCGTTGG 2123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2122 TGTAGGACCAGGC....GTGCTGGAAGTACTCCTCGAGGCGCTGGCGCAG 2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2076 GGGATTGGGGATCTGGTGGAAGCGGATGAACTCCCGCACCCGCAGCATCT 2027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99 oArgTyrAspMetAspArgPheGlyValValValPheArgAlaSerProArgG 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116 lnSerAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaPro 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133 AlaLeuArgLysValTyr.....AspGlnMetProGluProArgTyrVa 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               147 lValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerT 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ......SerSerArgGlyGluTyrValValAlaLysLeuAspA 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69 spLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrPheGly 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86 LeualaCysCysAlaValGluMetMet......HisMetAlaAlaPr 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41 SerThrGlnProAlaLeuProLysAlaArgAlaValAlaProLysPro. 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2025 ...TGTGTGGTAGCGGGCTGTGCCCGAGTACAGCCGCTGGAT 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps: 6
Percent Identity: 27.211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            164 yrSerValValArgGlyCysAspArgIleValProValAsp 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2026 G.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-525-867-1 x US-09-226-012-1/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80.50
1.134
48.299
                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(3477)
US-09-226-012-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
```

us-09-525+867-1.rai

```
Appli
Appli
Appli
Appli
Appli
                                  Sequence
Sequence
Sequence
Sequence
                                                                                                                           Sequence
Sequence
Sequence
                                                                                                                                                               Sequence
Sequence
Sequence
                                                                                Seguence
                                                                                            Sequence
                                                                                                        Seguence
                       Seguence
                                                                                                                  Seguence
                                                                                                                                                                                                                                                                                            Sequence 5, Application US/09261471
Patent No. 6025123
GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Lal, Preeti
APPLICANT: Corley, Neil C.
TITLE OF INFUNION: HUMAN SUCCINYL-COA SYNTHETASE HOLDENZYME
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 718; DB 3; Length 182; Pred. No. 2.2e-76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMFUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOSTWARE: WORD BELfect 6.1 for Windows/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/261,471
                    US-08-460-751-2
US-08-46-762-17
US-08-46-762-94
US-08-188-281B-13
PCT-US94-07280-13
PCT-US95-01087-13
US-08-188-281B-12
PCT-US95-01087-12
US-08-413-552-1
US-08-413-552-1
                                                                                                                                                             US-08-811-566-20
US-09-014-416-1
PCT-US91-02225-10
PCT-US93-00907-1
US-08-444-818-138
                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: CERRONE, MICHAEL C.
REGISTRATION NUMBER: 39,132
REGISTRATION NUMBER: PF-0545 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 855-0555
TELEFAX: (650) 845-4166
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 182 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: INCYTE PHARMACEUTICALS, STREET: 3174 PORTER DRIVE CITY: PALO ALTO STAFF: CALIFORNIA COUNTRY: USA ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/099,677
FILING DATE:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.2%;
81.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : 182 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLONE: 92258365
US-09-261-471-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMMEDIATE SOURCE:
LIBRARY: Genba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE
                                                                                                                                                                                                                                                                      RESULT 1
US-09-261-471-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 18, were
Sequence 154, App
Sequence 154, App
Sequence 154, App
Sequence 154, App
Sequence 4, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 37, Appl
Sequence 37, Appl
Sequence 37, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 124, Appli
Sequence 177, Appli
Sequence 6, Appli
Sequence 18, Appli
                                                                           February 12, 2002, 19:53:05; Search time 15.62 Seconds (without alignments) 306.863 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 8, Apsendence 42, Sequence 42, Sequence 17, 1
                                                                                                                                                   213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seguence 5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seguence 3,
Seguence 5,
                                                                                                                                                 1 MAVLSAPGLRGFRILGLRSS.....ILQLQRKIKRERRLQIWYRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                   212252
                                                                                                                                                                                                                                                                                                                                         sued_Patents_AA:*
/cgn2_6/ptodata/2/laa/5A_COMB.pep:*
/cgn2_6/ptodata/2/laa/5B_COMB.pep:*
/cgn2_6/ptodata/2/laa/6A_COMB.pep:*
/cgn2_6/ptodata/2/laa/6B_COMB.pep:*
/cgn2_6/ptodata/2/laa/PcTUS_COMB.pep:*
/cgn2_6/ptodata/2/laa/PcTUS_COMB.pep:*
          GenCore version 4.5
(c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hits satisfying chosen parameters:
                                                                                                                                                                                                            212252 seqs, 22503292 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                       protein search, using sw model
                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                           US-09-525-867-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Copyright
                                                                                                                                                                                                                                                                                                                                             Issued
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match 1
                                                                                                                                                                                                                                   οţ
                                                                                                                                                                                                                                                           sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perfect score:
                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                   Total number
                                                                                                                                                                                                                                                          Minimum DB
Maximum DB
                                                      OM protein
                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                   Sednence:
                                                                                                                                                                                                            Searched:
                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
```

õ

```
ATTORNEY/AGENT INFORMATION:
NAME: SATA, Charles S.
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELETAX: 608 -831-2106
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTEREISTICS:
LENGTH: 510 annino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 42, Application US/08836075A
Patent No. 6180768
GENERAL INFORMATION:
APPLICANT: MAERIENS, GEERT
APPLICANT: STUYVER, LIEVEN
                                                                                                                  Sequence 8, Application US/09498599
Patent No. 6303352
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 23.74
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: peptide HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
TOPOLOGY: lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-836-075A-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANTI-SENSE:
                                                                              RESULT 3
US-09-498-599-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5,
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109 VFRASPRQSDVMIVAGTLTNKMAPAL -- RKVYDQMPEPRYVVSMGSCANGGGYYHYSYSV 166
                                                                                                                                       58 SRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQS 117
                                                                                                                  118 DVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVD 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 VRGCDRIVPVDIY------IPGCPPTAEALLYG--ILQLQRKIKRER 205
                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Cameron, Douglas C.
APPLICANT: Shaw, Anita J.
APPLICANT: Altaras, Nedim E.
TITLE OF INVENTION: MICROBIAL PRODUCTION OF 1,2-PROPANEDIOL
TITLE OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 7.9%; Score 88.5; DB 3; Length 510; Best Local Similarity 23.7%; Pred. No. 0.079; Matches 27; Conservative 23; Mismatches 35; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Pyridine nucleotide transhydrogenase, subunit ORGANISM: A US-08-801-344-8
  11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/801,344
                                                                                                                                                                                                178 IYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                      147 IYVPGCPPTAEALLYGLLQLQKKIKRSRKTLYWLQK 182
18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: DeWitt Ross & Stevens S.C. STREET: 8000 Excelsior Drive, Suite 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09820.037
                                                                                                                                                                                                                                                                                                                US-08-801-344-8; Sequence 8, Application US/08801344; Patent No. 6087140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: SATA ChAILES S.
REFERENCE/DOCKET NUMBER: 0982
TELECOMMUNICATION INFORMATION:
TELEFAN: 608-831-2106
INFORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS:
LENGTH: 510 amino acids
TYRE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANTI-SENSE: NO
FRAGMENT TYPE: N-terminal
ORIGINAL SOURCE:
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: U.S.A.
ZIP: 53717-1914
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Madison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYPOTHETICAL:
Matches 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                        g
                                                                                                                                                                                                                                 q
                                      ò
                                                                            셤
                                                                                                                    ò
                                                                                                                                                                                                ò
```

```
109 VFRASPRQSDVMIVAGTLINKMAPAL - - RKVYDQMPEPRYVVSMGSCANGGGYYHYSYSV 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 291 --NCEYIVPGEIFTTENGVKVIGYTDLPGRLPTQSSQLYGTNIVNLLKLLCKEK 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167 VRGCDRIVPVDIY------IPGCPPTAEALLYG--ILQLQRKIKRER 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7.9%; Score 88.5; DB 4; Length 510;
23.7%; Pred. No. 0.079;
iive 23; Mismatches 35; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Pyridine nucleotide transhydrogenase, subunit ORGANISM: A US-09-498-599-8
                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/00/1/
APPLICANT: Cameron, Douglas C.
APPLICANT: Shaw, Anita J.
APPLICANT: Shaw, Anita J.
APPLICANT: Altaras, Nedim E.
TITLE OF INVENTION: MICROBIAL PRODUCTION OF
TITLE OF INVENTION: 1,2-PROPANEDIOL FROM SUGAR
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
                                                                                                                                                                            ADDRESSEE: Dewitt Ross & Stevens S.C.
STREET: 8000 Excelsior Drive, Suite 401
CITY: Madison
STATE: W.S.A.
ZIP: 53717-1914
```

ñ

```
130 IISATAFHSKMALPGLPRSAYPAVSGFWQGALPGQAGSSQDVKPFTQQPYALQPSLPLPG 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51 AVAP-----KPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYD 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 VLSAPGLRGFRIL-GLRSSVGPAVQA-----RGVHQSVA--TDGPSSTQPALPKAR 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 425;
         LARKIN, SARAH B.
FENTION: DTEF-1 ISOFORMS AND USES THEREOF
SQUENCES: 32
  TITLE OF INVENTION: DIEF-1 ISOFORMS AND USES THEREO CORRESPONDENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend Khourie and Crew STREET: Steuart Street Tower, One Market Plaza CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 MDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPR 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235 KHLFVHIGQSNPSYSDPYL------EAVDIRQIYDKFPEKK 269
                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFFWARE: Patentin Release #1.0, Version #1.25
CURRANT APPLICATION DATA:
APPLICATION NUMBER: US/08/615,170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6.3%; Score 70.5;
23.3%; Pred. No. 7.8
                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/01526
FILING DATE: 06-FEB-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/191,493
FILING DATE: 04-FEB-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Healin, James M.
REGISTRATION NUMBER: 29,541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MAR, Janet H.
FARRANCE, Iain K.G.
HALL, Deborah E.
STEWART, Alexandre F.R.
LARKIN, Sarah B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3, Application US/08615170 Patent No. 5776776 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 29,541
REFRENCE/DOCKET NUMBER: 23(TELECOMNUNICATION: TELEPONE: (415) 326-2400
TELEPAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORDAHL, Charles P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AZAKIE, Anthony
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : 425 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 23.33
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ) MOLECULE TYPE: peptide US-08-615-170-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                      COUNTRY: US
ZIP: 94105-1493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-615-170-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŎΛ
  NEW SEQUENCES OF HEPATITIS C VIRUS GENOTYPES
AND THEIR USE AS PROPHYLACTIC, THERAPEUTIC AND DIAGNOSTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64 VAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFG--------VVF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 RASPROSDVM----IVAGTL---TNKMAPALRKVYD------OMPE-:--PRYVVSMGSC 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75; Indels 71; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7 PGLRGFRILG---LRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYV 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; DB 4; Length 319;
5.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----ANGGGYYHY----SYSVVRGCDRIVPVDIYIPGCPPTAEA 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185 LTTPASAIQVKNASGIYHLTNDCSNNSIVFEAETMI---LHLPGCVPCIKA 232
                                                                                                                                                                                                                                   COMPUTER READALE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Microsoft Word 6.0 / ASCII text output
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,075A
FILING DATE: 21 Apr 1997
PRIOR APPLICATION DATE: 20 Ct 1995
PRIOR APPLICATION NUMBER: PCY/EP95/04155
FILING DATE: 23 Oct 1995
PRIOR APPLICATION NUMBER: EP 94870166.9
FILING DATE: 21 Oct 1994
PRIOR APPLICATION NUMBER: EP 95870076.7
FILING DATE: 21 Oct 1994
PRIOR APPLICATION NUMBER: EP 95870076.7
FILING DATE: 20 Jun 1995
ATTORNEY/AGENT INFORMATION:
NAME: KAMBRERE, PATRICIA A.
REGISTRATION NUMBER: 29,775
REGISTRATION NUMBER: INNS:004
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 19.5%; Pred. No. 5..
Matches 45; Conservative 40; Mismatche
                                                                                                           ADDRESSEE: ARNOLD, WHITE & DURKEE STREET: P.O. BOX 4433 CITY: HOUSTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AZAKIE, Anthony
MAR, Janet H.
FARRANCE, Iain K.G.
HALL, Deborah E.
STEWART, Alexandre F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 17, Application US/08615170 Patent No. 5776776 GENERAL INFORMATION:
                                                 AGENTS
TITLE OF INVENTION: NEW TITLE OF INVENTION: AND TITLE OF INVENTION: AGEN NUMBER OF SEQUENCES: 207 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: peptide US-08-836-075A-42
                                                                                                                                                                          STATE: TEXAS
COUNTRY: USA
ZIP: 77210-4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
US-08-615-170-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
150 IISATAFHSKMALPGLPRSAYPAVSGFWQGALPGQAGSSQDVKPFTQQPYALQPSLPLPG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51 AVAP-----KPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYD 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210 FDSPTGLPPSSSTPAWQGRRVAS-----SKLWMLEFS----AFLEQQODQDTYN 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 VLSAPGLRGFRIL-GLRSSVGPAVQA-----RGVHQSVA--TDGPSSTQPALPKAR 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 37, Application US/08258287B
Patent No. 608335
GENERAL INFORMATION:
APPLICANT: Year, Junying
APPLICANT: Miura, Masayuki
TITLE OF INVENTION: Programmed Cell Death Genes and Proteins
NUMBER OF SEQUENCES: 85
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                 ADDRESSEE: Townsend and Townsend Khourie and Crew STREET: Steuart Street Tower, One Market Plaza CITY: San Francisco STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              103 MDRFGVVFRASPRQSDVMIVAGTLINKMAPALRKVYDQMPEPR 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255 KHLFVHIGQSNPSYSDPYL-----EAVDIRQIYDKFPEKK 289
                                                                                                                                                                                                                                                                        SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: D.C. STATE: D.C. STATE: D.C. STATE: D.C. STATE: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 6.3%; Score 70.5; D Best Local Similarity 23.3%; Pred. No. 8.3; Matches 38; Conservative 20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:

CLASSIFICATION: 435

PRIOR APPLICATION: 435

PRIOR APPLICATION OF FEB-1995

CLASSIFICATION: 435

PRIOR APPLICATION: 435

PRIOR APPLICATION: 435

PRIOR APPLICATION: 435

PRIOR APPLICATION: 435

PRIOR APPLICATION NUMBER: US 08/191,493

FILING DATE: 04.FEB-1994

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Heslin, James M.

REGISTRATION NUMBER: 29,541

REFERENCE/DOCKET NUMBER: 29,541

REFERENCE/DOCKET NUMBER: 29,541

TELEPONE: (415) 326-2420

TELEFAR: (415) 326-2420

TELEFAR: (415) 326-2420
                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, v
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/615,170
                                                                                                                                                             ZIP: 94105-1493
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 445 amino acids amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; MOLECULE TYPE: protein US-08-615-170-5
        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
US-08-258-287B-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     137 IISATAFHSKMALPGLPRSAYPAVSGFWQGALPGQAGSSQDVKPFTQQPYALQPSLPLPG 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51 AVAP-----KPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYD 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        197 FDSPIGLPPSSSTPAWQGRRVAS-----SKLWMLEFS----AFLEQQQDQDTYN 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 VLSAPGLRGFRIL-GLRSSVGPAVQA-----RGVHQSVA--TDGPSSTQPALPKAR 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 432;
TITLE OF INVENTION: DIEF-1 ISOFORMS AND USES THEREOF NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: AZAXIE, Anthony
APPLICANT: MAR, Janet H.
APPLICANT: FARRANCE, Tain K.G.
APPLICANT: FARRANCE, Tain K.G.
APPLICANT: STEWART, Alexandre F.R.
APPLICANT: STEWART, Alexandre F.R.
APPLICANT: LARIXIN, Sarah B.
APPLICANT: LARIXIN, Sarah B.
APPLICANT: ANTHON: DIEF-1 ISOFORMS AND USES THEREOF NUMBER OF SEQUENCES: 32
                                                                              ADDRESSEE: Townsend and Townsend Khourie and Crew
STREET: Steuart Street Tower, One Market Plaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           103 MDRFGVVFRASPRQSDVMIVAGTLINKMAPALRKVYDQMPEPR 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242 KHLFVHIGQSNPSYSDPYL-----EAVDIRQIYDKFPEKK 276
                                                                                                                                                                                                       ZIP: 94105-1493
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Partentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/615,170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.3%; Score 70.5; DB 1;
23.3%; Pred. No. 8;
tive 20; Mismatches 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
PRECISE STRUCK APPLICATION NUMBER: PCT/US95/01526
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US 08/191,493
FILING DATE: 04-FEB-1994
CLASSIFICATION 1435
ATTORNEY FAGENT INFORMATION:
NAME: Heellin, James M.
REGISTRATION NUMBER: 29,541
REPERRENCE/POCKET UNMBER: 2307U-053120
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5, Application US/08615170 Patent No. 5776776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: ORDAHL, Charles P.
APPLICANT: AZAKIE, Anthony
APPLICANT: MAR, Janet H.
APPLICANT: FARRANCE, IAIN K.G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (415) 326-2400
TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : 432 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 23.3%
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , MOLECULE TYPE: protein US-08-615-170-3
                                                                                                                              CITY: San Francisco
STATE: California
COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-615-170-5
```

g δ

à Ωp δ

```
360 GFPVLDSVDGV-PALIRRGWDKG---DGPNFLGCVRPQAQQVWRKKPSQADILIAYATTA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69 DLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMLVAGTLIN 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          416 QYVSW--RNSARGSWFIQAVCEVFSLHAK----DMDVVELLTEVNKK-----VACGFQTS 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11 GFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYVV--AKLD 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5, Application US/08658136
Patent No. 6071717
GENERAL INFORMATION:
APPLICANT: LANGES, REGORY M
APPLICANT: LANGES, TREGORY M
APPLICANT: CONNORS, TIMOTHY C
APPLICANT: GENORS, TIMOTHY C
APPLICANT: GENORS, TIMOTHY D
APPLICANT: GENORS, TIMOTHY D
APPLICANT: GENORS, TIMOTHY D
APPLICANT: GENORS, TIMOTHY D
APPLICANT: GIAN, FENG
TITLE OF INVENTION: POLYCYSTIC KIDNEY DISEASE GENE
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENZYME CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/658,136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 70.5; DB 3;
Pred. No. 9.8;
                                                                                                                                     NAME: BUGGLSKY, Lawrence B.
REGISTRATION NUMBER: 35,086
REFERENCE/DOCKET NUMBER: 0609.3920002
TELECOMMUNICATION INTRATION:
TELEFONE: (202) 371-2600
TELEFAX: (202) 371-2540
TELEFAX: (202) 371-2540
TELEX: 248636 SSK
INFORMATION FOR SEQ ID NO: 37:
SEQUENCE CHARACTERISTICS:
LENGTH: 497 anino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21; Mismatches
             CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/080,850
FILING DATE: 24-UTN-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY AGENT INFORMATION:
NAME: LASSEN, ELIZABETH
REGISTRATION NUMBER: 31,845
REFERENCE/DOCKET NUMBER: GEN4
TELECOMMUNICATION:
TELEPHONE: 508-872-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 6.3%;
Best Local Similarity 27.4%;
Matches 37; Conservative 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: ONE MOUNTAIN ROAD CITY: FRAMINGHAM STATE: MASSACHUSETTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            465 QGANILK ---- QMPE 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129 KMAPALRKVYDQMPE 143
                                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
STREET: ON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01701
                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-658-136-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω̈́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360 GFPVLDSVDGV-PALIRRGWDKG---DGPNFLGCVRPQAQQVWRKKFSQADILIAYATTA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69 DLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTN 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         416 QYVSW - RNSARGSWFIQAVCEVFSLHAK ---- DMDVVELLTEVNKK ---- VACGFQTS 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11 GFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYVV--AKLD 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-368-704C-37
Sequence 37, Application US/08368704C
Sequence 37, Application US/08368704C
SENERAL INFORMATION:
APPLICANT: Yuan, Junying
APPLICANT: Minra, Masayuki
ITLE OF INVENTION: Programmed Cell Death Genes and Proteins
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: Sterne, Kessler, Goldstein & Fox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.3%; Score 70.5; DB 3; Length 497; 27.4%; Pred. No. 9.8; ive 21; Mismatches 56; Indels 2
COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/258,287B
FILING DATE: 10-JUN-1994
CLASSIFICATION: 435
PRICA APPLICATION DATA:
APPLICATION NUMBER: US 08/080,850
FILING DATE: 24-JUN-1993
ATTORNEY/AGBWT INPORMATION:
NAME: BUQAISKY, LawTence B.
RESERENCE/POCKET NUMBER: 0609.3920001
TELECORMUNICATION NUMBER: 35.0609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0. Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/368,704C
FILIG DATE: 4.5An-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IE: Sterne, Kessler, Goldstein & Fox 1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 1100 New York Avenue, Suit CITY: Washington STATE: D.C.
COUNTRY: USA ZIP: 20005
COMPITE READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/258,287
FILING DATE: 10-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (202) 371-2600
TELEFAX: (202) 371-2540
TELEFAX: 248636 SSK
INFORMATION FOR SEQ ID NO: 37:
SEQUENCE CHARACTERISTICS:
LENGTH: 497 amino acids
TYPE: amino acid
US-08-258-287B-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 6.3%
Best Local Similarity 27.4%
Matches 37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129 KMAPALRKVYDQMPE 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          465 QGANILK ---- QMPE 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
```

g δ В δ g δ Dp ò qq

δλ

```
/note= "There is a heterogeneity at
this location; Xaa = Pro or Ser"
                                                                                                                                                                                                                                     /note= "There is a heterogeneity at
this location; Xaa = Asn or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "There is a heterogeneity at this location; Xaa = Met or Val"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "There is a heterogeneity at
this location; Xaa = Ile or Leu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: 1276
OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Leu or Pro"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: 1471
OTHER INFORMATION: /note= "There is a heterogeneity at
OTHER INFORMATION: this location; Xaa = Ser or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Glu or Gly"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/XEY: Modified-site
LOCATION: 1949
OTHER INFORMATION: /note= "There is a heterogeneity at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: 1454
OTHER INFORMATION: /note= "There is a heterogeneity
OTHER INFORMATION: this location; Xaa = Cys or Tyr"
                                                                                                                                          /note= "There is a heterogeneity this location; Xaa = Arg or Lys"
                                                                                                                                                                                                                                                                                                                                    /note= "There is a heterogeneity
this location; Xaa = Ile or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "There is a heterogeneity
this location; Xaa = Asn or Tyr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "There is a heterogeneity
this location; Xaa = Ser or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "There is a heterogeneity
this location; Xaa = His or Leu"
                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: Modified-site
LOCATION: 334
OTHER INFORMATION: Ante-
OTHER INFORMATION: this lo
FEATURE:
NAME/KEY: Modified-site
LOCATION: 603
OTHER INFORMATION: Ante-
OTHER INFORMATION: this lo
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: Modified-site
LOCATION: 1114
OTHER INFORMATION: /note-
OTHER INFORMATION: this lo
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: Modified-site
LOCATION: 1948
OTHER INFORMATION: /note
OTHER INFORMATION: this
FEATURE:
                                                                                                     NAME/KEY: Modified-site LOCATION: 9
                                                                                                                                                                                                                                                                                            NAME/KEY: Modified-site
LOCATION: 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: Modified-site
LOCATION: 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: Modified-site LOCATION: 1877
                                                                                                                                                                                              NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: Modified-site
    amino acid
EDNESS: single
                                                              MOLECULE TYPE: protein FEATURE:
                                                                                                                   LOCATION: 9
OTHER INFORMATION:
                                                                                                                                                                                                                   LOCATION: 11
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION:
OTHER INFORMATION:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: 1117
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: 848
OTHER INFORMATION:
                                                linear
        TYPE: amino (STRANDEDNESS:
                                                TOPOLOGY:
                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                    707 VLMLPG----DLVGLQHDAGPGAL---LHCSPAPGHPG-----PRAPYLSANASSWLPH 753
                                                                                                                                                                                                                                                                                                                                                                             754 LPAQLE------GTW-----ACPACALRLLAATEQLTVLLGLRPNPGLRLPGRYEV 798
                                                                                                                                                                                                                                                                                                                                                                                                                            ----REGVVFRASPROSDVMIVAGTLTNKMAPALRKVYDQMPEPR---- 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                  799 RAEVGNGVSRHNLSCSFDVV---SP-----VAG------LRVIY---PAPRDGRL 836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     146 YVVSMGSC------ANG-----GGYYHYSYSVVRGCDRIVP--VDIYIPGCPPTAE 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 VLSAPGLRGFRILGLRSSVGFAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEY 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 6.3%; Score 70; DB 3; Length 4302; Best Local Similarity 23.3%; Pred. No. 2.8e+02; Matches 58; Conservative 24; Mismatches 57; Indels 1.
                                                                                                                                                                                                                                                                                                                                              63 VVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION TO ANY 1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: HARBIN, ALLSA A.
REGISTRATION NUMBER: 33,895
REFERENCE/DOCKET NUMBER: 0154.
TELECOMMUNICATION INPORMATION:
TELEPHONE: (510) 655-3542
INFORMATION FOR SEQ ID NO: 3;
SEQUENCE CHARACTERISTICS:
LENGTH: 2955 amino acids
TELEFAX: 508-872-5415
; INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 4302 amino acids
TYPE: amino acid TYPE: amino acid TYPE: TYPE: DIOLOGY: linear
MOLECULE TYPE: protein
US-08-658-136-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  891 DILFSVVAL 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                189 ALLYGILQL 197
                                                                                                                                                                                                                                                                                                                                                                                                                         104 D-----
```

```
OTHER INFORMATION: /note= "There is a heterogeneity at
OTHER INFORMATION: this location; Xaa = Met or Val"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: 1276
OTHER INFORMATION: /note= "There is a heterogeneity at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: 9
OTHER INFORMATION: /note= "There is a heterogeneity
OTHER INFORMATION: this location; Xaa = Arg or Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: 11 OTHER INFORMATION: /note= "There is a heterogeneity OTHER INFORMATION: this location; Xaa = Asn or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "There is a heterogeneity
this location; Xaa = Ile or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Modified-site
LOCATION: OTHER INFORMATION: /note= "There is a heterogeneity
OTHER INFORMATION: this location; xaa = 1le or Leu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: Modified-site
LOCATION: WAS OTHER INFORMATION: /note= "There is a heterogeneity
OTHER INFORMATION: this location; Xaa = Asn or Tyr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "There is a heterogeneity
this location; Xaa = Ser or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "There is a heterogeneity this location; Xaa = Pro or Ser"
                                                                                                                                                             COMPOTER: PLOPMY disk
COMPOTER: IBM PC Compatible
COMPOTER: IBM PC Compatible
COMPOTER: IBM PC Compatible
COMPOTER: IBM PC Compatible
CORRENT OF SYTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/442,805A
FILING DATE: 17-MAY-1995
CLESSIFICATION: 530
ATTORNEY/AGRNT INFORMATION:
NAME: HARBIN, ALISA A.
REFERENCE/DOCKET NUMBER: 0154.005
REFERENCE/DOCKET NUMBER: 0154.005
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION OF SEQ ID NO: 3:
SEQUENCE CHARACTER STICS:
LENGTH: 2055 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECUE TYPE: protein
              Chiron Corporation
                               4560 Horton Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: Modified-site
LOCATION: 1114
OTHER INFORMATION: /note
OTHER INFORMATION: this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Modified-site LOCATION: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: Modifled-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Modified-site
LOCATION: 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: Modified-site LOCATION: 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Modified-site
                                                                                                     COUNTRY: USA
ZIP: 94608-2916
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: 176
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION:
                                                       Emeryville
California
              ADDRESSEE:
                                                                           STATE: C. COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 VAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ----- 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       75 -----TWAQPGYPWPL-YGNEGCGWAGW-LLSPRGSRPSWG---PTDPRRRSRNLGK 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 ------SDVM-----IVAGTLINKMAPALRKVYD-----QMPE---PRYVVSM 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25 PG--GGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPIPKAR----RPEGR---- 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 PGLRGFRILG---LRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYV 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75; Indels 79;
                                                                                                                                                                                                                                                                                                                                                     Length 2955;
                                                                                                                                                                                LOCATION: 2349
OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Ser or Thr"
PEATURE:
NAME/KEY: Modified-site
LOCATION: 2385
OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Phe or Tyr"
NAME/KEY: Modified-site
LOCATION: 2386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151 GSC------ANGGGYYHY-----SYSVVRGCDRIVPVDIYIPGCPP 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182 LSCLTVPASAYQVRNSTGLYHVTNDCPNSSIVYEAADAI----LHTPGCVP 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Application US/08442805A
-Patent No. 6074846
GENERAL INFORMATION:
APPLICANT: RALSTON, ROBERT O.
APPLICANT: THUDIUM, KENT B.
APPLICANT: HALL, JOHN A.
TITLE OF INVENTE, BARBARA A.
APPLICANT: HALL, JOHN A.
TITLE OF INVENTEN: HEALT, JOHN A.
CORRESPONDENCE: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "There is a heterogeneity at
this location; Xaa = Arg or Gly"
                                                                                       OTHER INFORMATION: /note= "There is a heterogeneity OTHER INFORMATION: this location; Xaa = Gly or Val" PRATURE: Modified site
OTHER INFORMATION: this location; Xaa = Cys or Ser" FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 6.2%; Score 69.5; DB 2; Best Local Similarity 20.8%; Pred. No. 1.8e+02; Matches 48; Conservative 29; Mismatches 75;
                                                  Modified-site
2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION:
CTHER INFORMATION:
US-08-443-260-3
                                                  NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
US-08-442-805A-3
```

Db

g

ò

g

δ

```
117 -------GMP-----IVAGILINKMAPALRKVYD-------QMPE---PRYVVSM 150
                    122 VIDTLICGFADLMGYIPLVGAPLGSAARALAHGVRVLEDGVNYATGNLPGCSFSXFLLAL 181
                                                                                                                                                                                        ----ANGGGYYHY----SYSVVRGCDRIVPVDIYIPGCPP 185
                                                                                                                                                                                                                     182 LSCLTVPASAYQVRNSTGLYHVTNDCPNSSIVYEAADAI----LHTPGCVP 228
                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: RALSTON, ROBERT O.
APPLICANT: MARCUS, FRANK
APPLICANT: MARCUS, FRANK
APPLICANT: THUDIUW, KENT B.
APPLICANT: GENYASE, BARBARA A.
APPLICANT: HALL, JOHN A.
TITLE OF INVENTION: HEPATITIS C VIRUS ASIALOGLYCOPROTEINS
TUMBER OF SEQUENCES:
ADDRESSEE: Chiron Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: 9
OTHER INFORMATION: /note= "There is a heterogeneity at
OTHER INFORMATION: this location; Xaa = Arg or Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: 334
OTHER INFORMATION: /note= "There is a heterogeneity at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: /note= "There is a heterogeneity OTHER INFORMATION: this location; Xaa = Asn or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DARS:
APPLICATION NUMBER: US/08/443,900A
FILING DATE: 17-MAY-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "There is a
this location; Xaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
ZIP: 94608-2916
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentIn Ralease #1.0, v
                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/08443900A Patent No. 6074852 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTOREY AGENT INFORMATION:
NAME: HARBIN, ALISA A.
REGIGSTRATION NUMBER: 33,895
REFERENCE/DOCKET NUMBER: 0154
TELECOMMUNICATION INFORMATION:
TELEPRONE: (510) 651-2708
TELEPRA: (510) 655-3542
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 2955 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 4560 Horton Street
CITY: Emeryville
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: Modified-site LOCATION: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
STRANDEDNESS: Si
                                                                                                                                                                                                                                                                                                              RESULT 13
US-08-443-900A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION:
                                                                                                                            ď
                                                                                                                                                                                   δ
                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 VAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ----- 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7 PGLRGFRILG---LRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYV 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 6.2%; Score 69.5; DB 3; Length 2955; Best Local Similarity 20.8%; Pred. No. 1.8e+02; Matches 48; Conservative 29; Mismatches 75; Indels 79
                                                                                                             at
                                                                                                                                                                                                                                                                                                                                                  /note= "There is a heterogeneity at this location; \mathbf{Xaa} = \mathbf{Glu} \text{ or } \mathbf{Gl} \mathbf{y}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "There is a heterogeneity at
this location; Xaa = Cys or Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "There is a heterogeneity at
this location; Xaa = Ser or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "There is a heterogeneity at this location; Xaa =Phe or Tyr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "There is a heterogeneity at
this location; Xaa = Phe or Leu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "There is a heterogeneity at this location; Xaa = Gly or Arg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "There is a heterogeneity at
this location; Xaa = Arg or Gly"
                                                                                                     /note= "There is a heterogeneity this location; Xaa = Cys or Tyr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "There is a heterogeneity
this location; Xaa = His or Leu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "There is a heterogeneity this location; Xaa = Gly or Val"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "There is a heterogeneity
this location; Xaa = Ala or Ser"
                                                                                                                                                                                                                          /note= "There is a heterogeneity this location; Xaa = Ser or Thr"
       this location; Xaa = Leu or Pro'
                                                                      LOCATION: 1454
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
INFORMATION: /note-
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
OCATION: 1877
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: 1949

OTHER INFORMATION: /note-
OTHER INFORMATION: this lc
FRATURE:
NAME/KEY: Modified-site
LOCATION: 2021
OTHER INFORMATION: this lc
FRATURE:
NAME/KEY: Modified-site
LOCATION: 2349
OTHER INFORMATION: this lc
FRATURE:
NAME/KEY: Modified-site
LOCATION: 2349
OTHER INFORMATION: this lc
FRATURE:
NAME/KEY: Modified-site
LOCATION: 2365
OTHER INFORMATION: this lc
OTHER INFORMATION: /note-
COTHER INFORMATION: /note-
OTHER INFORMATION: /note-
OTHER INFORMATION: /note-
OTHER INFORMATION: this lc
                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: Modified-site
LOCATION: 1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: Modified-site

COCATION: 2921

COCHER INFORMATION: /note

) OTHER INFORMATION: this

US-08-442-805A-3
                                                    NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: Modified-site
LOCATION: 2690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION:
OTHER INFORMATION:
FEATURE:
OTHER INFORMATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION:
OTHER INFORMATION:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: 2502
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: 2386
OTHER INFORMATION:
OTHER INFORMATION:
```

δ 엄 å us-09-525-867-1.rai

Db δĀ ò à LOCATION: 1276
OTHER INFORMATION: // note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Leu or Pro"
FEATURE: NAME/KEY: Modified-site
LOCATION: 1454
OTHER INFORMATION: // note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Cys or Tyr"
FEATURE: NAME/KEY: Modified-site
LOCATION: 1471
OTHER INFORMATION: // note= "There is a heterogeneity at OTHER INFORMATION: // note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Ser or Thr"
FEATURE: NAME/KEY: Modified-site OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Ala or Ser" PEATURE: LOCATION: 1877
OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Glu or Gly" PEATURE:
NAMEKEY: Modified-site
LOCATION: 2349
OTHER INFORMATION: /note= "There is a heterogeneity at
OTHER INFORMATION: this location; Xaa = Ser or Thr" at /note= "There is a heterogeneity at this location; Xaa = Ser or Thr" /note= "There is a heterogeneity at
this location; Xaa = His or Leu" /note= "There is a heterogeneity at this location; Xaa = Cys or Ser" LOCATION: 2385
OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa =Phe or Tyr" /note= "There is a heterogeneity at this location; Xaa = Asn or Tyr" OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Pro or Ser" /note= "There is a heterogeneity at this location; Xaa = Gly or Val" /note= "There is a heterogeneity
this location; Xaa = Ile or Leu" this location; Xaa = Met or Val" NAME/KEY: Modified-site
LOCATION: 603
OTHER INFORMATION: /noteOTHER INFORMATION: this lo
FEATURE:
NAME/KEY: Modified-site
LOCATION: 848
OTHER INFORMATION: /noteOTHER INFORMATION: this lo
FEATURE:
NAME/KEY: Modified-site EATURE: NAME/KEY; Modified-site EATURE: NAME/KEY: Modified-site NAME/KEY: Modified-site Modified-site Modified-site NAME/KEY: Modified-site LOCATION: 1117 OTHER INFORMATION: OTHER INFORMATION: 1 FEATURE: MAME/KEX: MODIfied: LOCATION: 1948 OTHER INFORMATION: OTHER INFORMATION: LOCATION: 2021 OTHER INFORMATION: OTHER INFORMATION: OTHER INFORMATION: 'EATURE: FEATURE: NAME/KEY: LOCATION: LOCATION: EATURE:

64 VAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ----- 116 75 -----TWAQPGYPWPL-YGNEGCGWAGW-LLSPRGSRPSWG---PTDPRRRSRNLGK 121 11.7 -----SDVM-----IVAGTLINKMAPALRKVYD-----QMPE---PRYVVSM 150 7 PGLRGFRILG---LRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYV 63 25 PG--GGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPIPKAR----RPEGR---- 74 Query Match 6.2%; Score 69.5; DB 3; Length 2955; Best Local Similarity 20.8%; Pred. No. 1.8e+02; Matches 48; Conservative 29; Mismatches 75; Indels 79; 182 LSCLTVPASAYQVRNSTGLYHVTNDCPNSSIVYEAADAI----LHTPGCVP 228 151 GSC------ANGGGYYHY----SYSVVRGCDRIVPVDIYIPGCPP 185 /note= "There is a heterogeneity at this location; Xaa = Phe or Leu" at at /note= "There is a heterogeneity
this location; Xaa = Gly or Arg" /note≂ "There is a heterogeneity this location; Xaa = Arg or Gly" Sequence 124, Application US/08444818
Patent No. 6150097
GENERAL INFORMATION:
APPLICANT: Chien, David Y.
APPLICANT: Rutter, William J.
TITLE OF INVENTION: NANBV Diagnostics and Vaccines
NUMBER OF SEQUENCES: 777
CORRESPONDENCE ADDRESS:
ADDRESSE: Chiron Corporation
STRRET: Emeryville COMPUTER READALLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRNY APPLICATION DATA:
APPLICATION NUMBER: US/08/444,818 FILING DATE:
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/403,590
FILING DATE: 14-MAR-1995
ATTORNEY/AGENT INFORMATION:
NAME: Harbin, Allsa A.
REGISTRATION NUMBER: 33,895 REGISTRATION NUMBER: 33,895
REFERENCE/DOCKET NUMBER: 0110.002
TELECOMMUNICATION INFORMATION:
TELEPHONE: (508)359-3876
INFORMATION FOR SEQ ID NO: 124: LOCATION: 2502

OTHER INFORMATION: /rote=
OTHER INFORMATION: this la
FEATURE: NAME/KEY: Modified-site
LOCATION: 2690
OTHER INFORMATION: /note=
OTHER INFORMATION: this la
FEATURE: MODIFIED-site
LOCATION: 2690
MME/KEY: MODIFIED-site COCATION: 2921 CTHER INFORMATION: CTHER INFORMATION: US-08-443-900A-3 RY: USA 94608-2916 US-08-444-818-124 COUNTRY: STATE: RESULT

us-09-525-867-1.rai

SEQUENCE CHARACTERISTICS LENGTH: 2955 amino ac TYPE: amino acid STRANDEDNESS: single TOPOLOGY: linear	ICS: acids		
MOLECULE TYPE: peptide FEATURE: NAME/KEV: Dunlicatio	de		
LOCATION: 9 OTHER INFORMATION: /n	/note= "A Xaa which	heterogeneity exists at is either Lys or Arg"	
OTHER INFORMATION: OTHER INFORMATION:	/note= "A Xaa which	heterogeneity exists at is either Asn or Thr"	
FEATURE: NAME/KEY: Duplicat LOCATION: 176 OTHER INFORMATION: OTHER INFORMATION:	tion /note= "A Xaa which	heterogeneity exists at is either Ile or Thr"	
KEY: Duplica ION: 334 INFORMATION:	tion /poto= "%		
OTHER INFORMATION: OTHER INFORMATION: FEATURE:	/note= "A Xaa which	n neterogeneity exists at i is either Met or Val"	
EY: Duplica ON: 603 INFORMATION: INFORMATION:	tion /note= "A Xaa which	heterogeneity exists at is either Leu or Ile"	
EY: Duplica ON: 848 INFORMATION:	tion /note= "A	heterogeneity exist	
OTHER INFORMATION: FEATURE: NAME/KEY: Duplicat		is either Tyr or Asn	
ION: 1276 INFORMATION: INFORMATION:	/note= "A Xaa which	heterogeneity exists at is either Pro or Leu"	
EY: Duplica ON: 1454 INFORMATION: INFORMATION:	ion /no Xaa	heterogeneity exi is either Cys or	
EY: Duplica DN: 1471 INFORMATION:	ion /not	neterodenetic	
RMATION:	Xaa whi	is either Thr or Ser"	
EI: DUPLICATION: 1877 INFORMATION: INFORMATION:	ton /note= "A Xaa which	heterogeneity exists at is either Glu or Glu"	
Duplica 1948 RMATION	. * -	heterogeneity exis	
FEATURE: NAME/KEY: Duplication LOCATION: 1949 OTHER INFORMATION: /no OTHER INFORMATION: xaa	ion /note= "A Xaa which	heterogeneity exists at is either Ser or Cys"	
FEATURE: NAME/KEY: Duplication LOCATION: 2021 OTHER INFORMATION: /no OTHER INFORMATION: Xaa	ion /note= "A Xaa which	heterogeneity exists at is either Gly or Val"	
FEATURE: NAME/KEY: Duplication	ion		

```
75 -----TWAQPGYPWPL-YGNEGCGWAGW-LLSPRGSRPSWG---PTDPRRRSRNLGK 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117 -----SDVM----IVAGTLINKMAPALRKVYD-----QMPE---PRYVVSM 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7 PGLRGFRILG---LRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYV 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 VAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/08249843
; Sequence 3, Application US/08249843
; Parcent No. 6274140;
GENERAL INFORMATION:
APPLICANT: RALESTON, ROBERT O.
APPLICANT: MARCUS, FRANK
APPLICANT: GENARES, BARBARA A.
APPLICANT: HUDIOM, RENT B.
TITLE OF INVENTION: HEPATITIS C VIRUS ASIALOGLYCOPROTEINS
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSES: Chiron Corporation
STREET: A560 Horton Street
STREET: Galifornia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 6.2%; Score 69.5; DB 4; Length 2955; Best Local Similarity 20.8%; Pred. No. 1.8e+02; Matches 48; Conservative 29; Mismatches 75; Indels 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151 GSC------ANGGGYYHY-----SYSVVRGCDRIVPVDIYIPGCPP 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182 LSCLTVPASAYQVRNSTGLYHVTNDCPNSSIVYEAADAI----LHTPGCVP 228
                                                                                                                                                                                                                         NAME/KEY: Duplication
LOCATION: 2386
OTHER INFORMATION: /note= "A heterogeneity exists at OTHER INFORMATION: Xaa which is either Ser or Ala" FEATURE:
NAME/KEY: Duplication
LOCATION: 2502
OTHER INFORMATION: /note= "A heterogeneity exists at OTHER INFORMATION: Xaa which is either Leu or Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Duplication
COCATION: 2921
COCHER INFORMATION: /note= "A heterogeneity exists at
THER INFORMATION: Xaa which is either Arg or Gly"
US-08-444-818-124
                             /note- "A heterogeneity exists at
Xaa which is either Thr or Ser"
                                                                                                                                                   OTHER INFORMATION: /note= "A heterogeneity exists at OTHER INFORMATION: Xaa which is either Tyr or Phe" FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: /note= "A heterogeneity exists at
OTHER INFORMATION: Xaa which is either Arg or Gly"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                 OTHER INFORMATION: Xaa
FEATURE:
NAME/KEY: Duplication
LOCATION: 2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: Duplication
LOCATION: 2690
LOCATION: 2349
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94608-2916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Eme
STATE: Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ōλ
```

14;

us-09-525-867-1.rai

```
OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Arg or Lys" FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: /note= "There is a heterogeneity at OTHER INFORMATION: this location; Xaa = Cys or Tyr" PEATURE: NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "There is a heterogeneity at this location; Xaa = Asn or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "There is a heterogeneity at this location; Xaa = Ile or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "There is a heterogeneity at
this location; Xaa = Met or Val"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "There is a heterogeneity at this location; Xaa = Ile or Leu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "There is a heterogeneity at
this location; Xaa = Pro or Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "There is a heterogeneity at
this location; Xaa = Ser or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "There is a heterogeneity at
this location; Xaa = Leu or Pro"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "There is a heterogeneity
this location; Xaa = Asn or Tyr"
COMPUTER: IBM PC compatible
SOFTWARE: Patentin Release #1.0, Version #1.25
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: 26-AMA'1994
CLASSIFCATION NUMBER: US/08/249,843
FILING DATE: 26-AMA'1994
CLASSIFCATION 1435
ATTORNEY/AGENT INFORMATION:
NAME: HARBIN, ALISA A.
RECIETRATION INFORMATION:
TELEPHONE: (510) 601-2708
TELEFAX: (510) 665-3542
INFORMATIONE CRARACTERISTICS:
LENGTH: 2955 amino acids
STRANDENDESS: SINGle
STRANDENDESS: SINGle
TOPOLOGY: linear
MOLECULE TYPE: MOdified-site
COCATION: NAME/KEY: Modified-site
COCATION: INFORMATION: CALCALLER INFORMATION: CALCALLER INFORMATIONE TYPE: AMANGY INF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME, N.C.

LOCATION: 334

OTHER INFORMATION: /note= 'OTHER INFORMATION: this lo FEATURE: NAME/KEY: Modified-site 'OTATION: 603 .... /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: Modified-site
LOCATION: 11
COTHER INFORMATION: this ic
FRAMENE:
NAME/KEY: Modified-site
LOCATION: 176
COTHER INFORMATION: /note=
OTHER INFORMATION: /note=
OTHER INFORMATION: /note=
FRATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME/KEY: Modified-site
LOCATION: 848
OTHER INFORMATION: /note=
OTHER INFORMATION: this LC
FAPTURE:
NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: Modified-site
LOCATION: 1276
OTHER INFORMATION: /note-
OTHER INFORMATION: this lo
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Modified-site
LOCATION: 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Modified-site LOCATION: 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: 1114
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION:
```

```
64 VAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ----- 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75 -----TWAQPGYPWPL-YGNEGCGWAGW-LLSPRGSRPSWG---PTDPRRRSRNLGK 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .17 -----SDVM-----IVAGTLTNKMAPALRKVYD-----QMPE---PRYVVSM 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 VIDTLTCGFADLMGYIPLVGAPLGSAARALAHGVRVLEDGVNYATGNLPGCSFSXFLLAL 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7 PGLRGFRILG---LRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYV 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25 PG--GGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPIPKAR----74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.2%; Score 69.5; DB 4; Length 2955; 20.8%; Pred. No. 1.8e+02; tive 29; Mismatches 75; Indels 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151 GSC-----ANGGGYYHY----SYSVVRGCDRIVPVDIYIPGCPP 185
                   /note= "There is a heterogeneity at
this location; Xaa = Ser or Thr"
                                                                                                                                    at
                                                                                                                                                                                                                                                    at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "There is a heterogeneity at
this location; Xaa = Ser or Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "There is a heterogeneity at this location; Xaa =Phe or Tyr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                at
                                                                                                                                                                                                                                                                                                                                                         /note= "There is a heterogeneity at
this location; Xaa = Cys or Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "There is a heterogeneity at
this location; Xaa = Arg or Gly"
                                                                                                                                OTHER INFORMATION: /note= "There is a heterogeneity OTHER INFORMATION: this location; Xaa = Glu or Gly"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "There is a heterogeneity
this location; xaa = Gly or Val"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "There is a heterogeneity
this location; Xaa = Ala or Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "There is a heterogeneity
this location; xaa = Phe or Leu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "There is a heterogeneity
this location; Xaa = Gly or Arg"
                                                                                                                                                                                                                                            /note= "There is a heterogeneity
this location; Xaa = His or Leu"
                                                                                                                                                                                                 NAME/KEY: Modified-site
LOCATION: 1948
OTHER INFORMATION: /note
OTHER INFORMATION: this
                                                              FEATURE:
NAME/KEY: Modified-site
LOCATION: 1877
                                                                                                                                                                                                                                                                                                                NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: Modified-site LOCATION: 2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: Modified-site LOCATION: 2502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION:
OTHER INFORMATION:
PEATURE:
                                                                                                                                                                                                                                                                                                                                      LOCATION: 1949
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: 2349
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION:
LOCATION: 1471
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COCATION: 2921

CTHER INFORMATION:

CTHER INFORMATION:

US-08-249-843-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 48; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

14;

DD 182 LSCLTVPASAYQVRNSTGLYHVTNDCPNSSIVYEAADAI----LHTFGCVP 228

Search completed: February 12, 2002, 20:40:47 Job time: 2862 sec

80. 27. 10. 12.

```
The invention relates to human nucieic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the paripheral nervous system, such as paripheral nervous injuries, peripheral neuropathies and central nervous system diseases, such as Alzhehmer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activity, chemoteric/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and c.N. S disorders.

Note: The sequence data for this patent did not form part of the printed specification.
 3.1e+03
40.51
5.9e+03
16.96
                                                                                                                                                                                                                                                                                                                 Human, nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
95.45
129.18
90.38
135.97
135.97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ren F,
Zhang J
 86.00
85.50
85.00
84.50
                                                                                                               seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAŢ:AAI60566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 752 BP; 130 A; 260 C; 236 G; 126 T; 0 other;
       + + + +
SIDS2/gcgdata/geneseq/geneseqn/NA1999.DAT:AAZ21501 /SIDS2/gcgdata/geneseqn/NA2001.DAT:AAH13954 /SDS2/gcgdata/geneseqn/Nacseqn/NA2001.DAT:AAS0693 /SIDS2/gcgdata/geneseqn/geneseqn/NA2001.DAT:AAS0693 /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAF7130 /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAF7130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ten R, Ma Y, C
tu C, Xue AJ,
Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID NO 4555; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xu C,
                                                                                                                                                                                                                                                                                 Human polynucleotide SEQ ID NO 4555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Asundi V, Che
Wehrman T, Xu
Goodrich R,
                                                                                                                                                                      ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0488725.
2000US-052317.
2000US-0529842.
2000US-0629312.
200US-0653450.
2000US-0653450.
2000US-0653450.
                                                                                                                                                                    752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000WO-US34263.
                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                      AAI60566 standard; cDNA;
                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-442253/47
                                                                                                                                                  seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Liu C, 1
Wang 2, 1
Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAM41410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                    eukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-JAN-2000;
25-APR-2000;
09-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JUL-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-OCT-2000;
29-NOV-2000;
                                                                                                                                                                                                                                             22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tang YT,
Wang J, W
Zhao QA,
                                                                                                                                                                                                        AA160566;
                                                                                                                                                                        976 :
1266 :
72750
349980
1437668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7223 !
7484 !
1664976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58909
134525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1664976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45624
50000
                                                                                                                                            -MODEL=frame+_p2n.model -DEV=x1h
-Q=Cqn2_1/USPTO_spool/USO9528667/runat_12022002_111928_15642/app_query.fasta_1.272
-D=N_Geneseq_1101 -OFMT=fastap -SDFFIX=rng -GAPOP=12.000
-GAPOXT=4.000 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPSXT=0.000
-GAPOXT=4.000 -GAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-GAPOP=4.500 -GGAPEXT=0.050 -XGAPOP=10.000 -YGAPEXT=0.500
-FGAPOP=6.000 FGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=pct
-THR_MAX=100 -THR_MN=0 -ALIGN=15 -MODE=LOCAL -OUTENT=pfs
-NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000
-USER=USO9525867_@CGRIL_1270 -NOPU-6 -ICPU-3 -LONGLOG
-DEV_TIMEOUT=120 -WARL_TIMEOUT=30 -NO_XLPXX -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16.22
20.25
575.77
22.34
1.5e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154.45
154.08
97.46
155.37
153.70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
87
12
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82
                                                                             5.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1111188
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
7257.00 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  00000
                                                                             version
   out_format :
                                                                             software,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DAT: AAC59553
DAT: AAC43639
DAT: AAC48639
DAT: AAC41785
DAT: AAC41785
DAT: AAA81464
DAT: AAA81490
DAT: AAA81490
DAT: AAA81490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ESCOre Len
.DAT:AAI60566 -
.DAT:AAI58780 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DAT: AAC95299
DAT: AAV61275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DAT: AAV58509
DAT: AAA06272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .DAT: AAV58416
.DAT: AAT51755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DAT: AAH93388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DAT: AAH84702
DAT: AAH02453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DAT: AAV21209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DAT: AAS10031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DAT: AAC76444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DAT: AAV69307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DAT: AAI60954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DAT: AAX60621
of: US-09-525-867-1 to: N_Geneseq_1101:*
                                                                             GenCore
                                                                       Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseqn/NA2000_DAT/SIDS2/gcddata/geneseq/geneseq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence Strd Orig ZSCore/SIDS2/gcgdata/geneseq/geneseqn/NA2001.]
/SIDS2/gcgdata/geneseq/manaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database: N_Geneseq_1101:*
Database sequences: 930621
Database length: 42866619
Search time (sec): 102.220000
                                                                                                                                                                                                                                                                                                                                                                                              Search information block:
                                     Date: Feb 12, 2002 8:39
                                                                                                                              Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                              Query: US-09-525-867-1
Query length: 213
 ŏ
```

```
150
                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lArgGlyCysAspArgIleValProValAspIleTyrIleProGlyCysP 184
                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                     94
                                                                                                                                                   17
                                                                                                                                                                                 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: /SIDS2/gcgdata/geneseq/genesegn/NA2001.DAT:AA158780
                                                                                                                                                                  5 ATGCCGGTGCTGTCAGCTCCTGCCCTGCCGGGCTTCCGGATCCTTGGTCT
                                                                                                                                                                                                                                                                                          rAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaProAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetAlaValLeuSerAlaProGlyLeuArgGlyPheArgIleLeuGlyLe
                                                                                                                                                                                                             uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV
                                                                                                                                                                                                                                                                                                                                       AlavalAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                                                                                                                                                                                                                          GCCGTGGCTCCCAAACCCAGCAGCAGGGGGGGGAGTATGTGGGGGGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                      GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCCATGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TyraspMetaspargPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACGACATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGGCTGCGACCGCATCGTGCCCCGTGGACATCTACATCCCAGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                     uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                                                                                                                                                                                                               heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGAGCTGCGCCAACGGAGGCTACTACCACTATTCCTACTCGGTGGT
           Length: 213
Gaps: 0
Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _documentation_block:
AAI58780 standard; cDNA; 772
                                                                                                                    Align seg 1/1 to: AAI60566
         Ouality: 1118.00
Ratio: 5.249
Percent Similarity: 100.000
                                                                                        US-09-525-867-1 x AAI60566
alignment_scores
                                                                        alignment_block:
                                                                                                                                                                                                                                                                           34
                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    555
                                                                                                                                                                                                                                            55
                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                               205
                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 605
```

(first entry)

22-OCT-2001

AXXXXX

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polymucleotides are useful in gene therapy. A composition containing a polypeptide or polymucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system diseases, such as lazheimer's, Parkinson's disease, Huntington's disease, such as lazheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotectic/chemokinetic activity, haemostatic and thrombolytic activity, chemotectic/chemokinetic activity, haemostatic and thrombolytic activity, arthritis and inflammation, leukaemias and C.N.S disorders.

Note: The sequence data for this patent did not form part of the printed
                                                            Human, nootropic, immunosuppressant, cytostatic, gene therapy, cancer, peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Hunkington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic, chemotactic; thrombolytic, drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ren F, W
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G; 126 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel nucleic acids and polypeptides, useful such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to: 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; SEQ ID NO 983; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; 245
Human polynucleotide SEQ ID NO 983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Note: The sequence data for this specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Liu C, Asundi V, Ch
Wang Z, Wehrman T, X
Zhou P, Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0663450.
2000US-0662191.
2000US-0662191.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-NOV-2000; 2000US-0727344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: AAI58780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality: 1118.00
Ratio: 5.249
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-525-867-1 x AAI58780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 772 BP; 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-442253/47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAM39624
                                                                                                                                                                                                                                                                                                                                                  WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
14-SEP-2000;
                                                                                                                                                                                                                        leukaemia; ss
                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                               26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tang YT,
Wang J, W
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HYSE-)
      8 \times 8
```

99US-0124099.

```
12-MAR-1999;
03-DEC-1999;
                                                                                                                                                                              infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1
                                                                         Rosen CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88
Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic; antidabetic; antinflammatory; antiulcer; vulnerary; anticonvulsant; antidaterial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder; neurological disease; infection; human; secreted protein; ss.
                                                                                                                                                                                                                                                                  117
                                                                                                                                                                                                                                                                                                                               CGACGTCATGATCGTGGCCGGCACACTCACCAACAAGATGGCCCCAGCGC 423
                                                                                                                                                                                                                                                                                                                                                                                  uArgSerSerValGlyProAlaValGlnAlaArgGlyValHisGlnSerV 34
                                                                           124 TGGCCACCGATGGCCCAAGCACCCCAGCCTGCCTGCCAAAGGCCAGA 173
                                                                                                                                                                                                              heGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaProArg 100
                                                                                                                                                                                                                                                                                                                  rAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaProAlaL 134
                                                                                                                                                                                                                                                                                                                                                                     euArgLysValTyrAspGlnMetProGluProArgTyrValValSerMet 150
                                                                                                                                                                                                                                                                                                                                                                                                                    GlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSerValVa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lArgGlyCysAspArgIleValProValAspIleTyrIÎeProGlyCysP 184
                                                                                                                          324 TACGACATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTC 373
                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seg_name: /SIDS2/gcgdata/geneseg/genesegn/NA2000.DAT:AAC59553
                                                                                                                                                                            GGATGACCTCGTCAACTGGGCCCGCCGGAGTTCTCTGTGGCCCCATGACCT
                                                                                                                                                                                                                             274 TCGGCCTGGCCTGCTGCCCGCGCGGGAGATGATGATGGCACACACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArg
                                                                                                            AlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysLe
                                                                                                                                                              uAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMetThrP
                                                                                                                                                                                                                                                                TyrAspMetAspArgPheGlyValValPheArgAlaSerProArgGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGAGCTGCGCCAACGGAGGAGGCTACTACCACTATTCCTACTCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        roProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnArgLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         201 IleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 624 ATCAAGCGGGAGCGGAGGCTGCAGATCTGGTACCGCAGG 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human secreted protein cDNA sequence #47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAC59553 standard; cDNA; 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-MAR-2000; 2000WO-US06044.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seg_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200055352-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-SEP-2000,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 574
                                                                                                                                                                                     224
                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                  117
                                                                                                                                                                                                                                                                                                                                          374
                                                                                                                                                                                                                                                                                                                                                                                            424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              524
                                74
                                                         34
                                                                                                          51
                                                                                                                                                           67
                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184
         17
```

```
The invention relates to the isolation of genes AACS9507-C59556 encoding generate fusion proteins AAB3418-B34264) The genes can be used to generate fusion proteins by linking to the gene for the human immunoglobulin G Fc portion (AACS9489) For increasing the stability of the fusion protein as compared to the human protein only. The genes and proteins are useful for preventing, amaliorating or treating medical conditions, e.g. by protein or gene therapy. The genes are isolated from a range of human tissues disclosed in the specification. The nuclear acids, proteins, annibodies and (ani)agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast and ovarian cancer, and other cancers of the adrenal gland, bone marrow, breast, gastrointestinal tract, liver, lung, or urogenital; construction of: (b) immune disorders e.g. Addison's Alsease, autoimmune hemolytic anaemia, autoimmune thyvoiditis, diabetes mellitus, Crohn's clisease, multiple sclerosis, rheumatoid arthritis and ulcerative collitis; (c) cardiovascular disorders such as myocardial ischaemias; (d) collitis; (e) neurological diseases e.g. cerebral anoxia and collitis; (c) epilepsy; and (f) infectious diseases such as viral, bacterial, fungal
                                                                                                                                                                                                                                                Novel human secreted proteins useful for diagnosis, prevention and treatment of disorders including neurological, cell proliferative, cardiovascular, autoimmune and inflammatory disorders and microbial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ysCysAlaValGluMetMetHisMetAlaAlaProArgTyrAspMetAsp 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68 GGGCCGGGCTGTGCAGGCACGAGGTGCCATCAGAGCGTGGCCACCGATG 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCAAGCAGCACCCAGCCTGCCTACCAAAGGCCAGAGCCGTGGCTCCC 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 SerAlaProGlyLeuArgGlyPheArgIleLeuGlyLeuArgSerSerVa 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21 lGlyProAlaValGlnAlaArgGlyValHisGlnSerValAlaThrAspG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38 lyProSerSerThrGlnProAlaLeuProLysAlaArgAlaValAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGAGTCCTGGCCTGCGGGCTTCCGGATCCTTGGTCTGCGCTCCAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LysProSerSerArgGlyGluTyrValValAlaLysLeuAspAspLeuVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71 lAsnTrpAlaArgArgSerSerLeuTrpProMetThrPheGlyLeuAlaC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAACTGGGCCCGCCGGAGTTCTCTGTGGCCCATGACCTTCGGCCTGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identify: 98.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 785 BP; 173 A; 255 C; 236 G; 121 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: 785
                                                                        Ö
                                                                    Komatsoulis
                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1: Page 345; 383pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from: 1
(HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     epilepsy; and (f) infections and parasitic infections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: AAC59553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality: 1065.00
Ratio: 5.120
nilarity: 99.522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-525-867-1 x AAC59553
                                                                    Ruben SM,
                                                                                                                                     WPI; 2000-602124/57
P-PSDB; AAB34261.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
```

```
Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic; pathway; promoter; termination sequence; corn; ss.
                                                                                                                                                                                       417
                                                                                                                                                                            PArglleValProValAspIleTyrIleProGlyCysProProThrAlaG 188
268 GCTGCGCCGTGGAGATGATGCACATGGCAGCACCCCGGCTACGACATGGAC 317
                                                          eValAlaGlyThrLeuThrAsnLysMetAlaProAlaLeuArgLysValT 138
                                                                                               yrAspGlnMetProGluProArgTyrValValSerMetGlySerCysAla 154
                                                                                                                    467
                                                                                                                                                                                                                                                                                                seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC43639
                  ACGACCAGATGCCGGAGCCGCGCTACGTGTCTCCATGGGGAGCTGCCCC
                                                                    CGTGGCCGGCACACTCACCAACAAGATGGCCCCAGCGCTTCGCAAGGTCT
                                                                                                                                                                                                                                                                                                                                                                                         Zea mays DNA fragment SEQ ID NO: 39953.
                                                                                                                                                                                                                                                         205 ArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                             617 CGGAGGCTGCAGATCTGGTACCGCAGG 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              990S-0121825.
990S-0123180.
990S-0123588.
990S-0125788.
990S-0126264.
990S-01276785.
990S-0128714.
990S-0128714.
990S-0128714.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9905-0130891.
9905-0131449.
9905-0132048.
9905-0132484.
9905-0132484.
                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
ID AAC43639 standard; DNA; 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                     17-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zea mays subsp. mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
01-APR-1999;
06-APR-1999;
06-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EP1033405-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1-APR-1999;
3-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-APR-1999
                                                                                                                                                                                                                                                                                                                                                  AAC43639;
                   105
                                     318
                                                        121
                                                                                               138
                                                                                                                  418
                                                                                                                                                        468
                                                                                                                                                                           171
                                                                            368
                                                                                                                                      155
                                                                                                                                                                                              518
```

```
PR 06-MAY 1999 990S-0132487.

PR 11 MAY 1999 990S-0132487.

PR 14 MAY 1999 990S-0134248.

PR 14 MAY 1999 990S-0134218.

PR 14 MAY 1999 990S-0134219.

PR 14 MAY 1999 990S-0134219.

PR 20 MAY 1999 990S-0134219.

PR 21 MAY 1999 990S-0134341.

PR 22 MAY 1999 990S-0134341.

PR 23 MAY 1999 990S-0134341.

PR 24 MAY 1999 990S-0134341.

PR 25 MAY 1999 990S-0134341.

PR 27 MAY 1999 990S-0134457.

PR 16 JUN 1999 990S-0133455.

PR 16 JUN 1999 990S-0133455.

PR 18 JUN 1999 990S-0133455.

PR 18 JUN 1999 990S-0133455.

PR 18 JUN 1999 990S-0133456.

PR 23 JUN 1999 990S-0133456.

PR 23 JUN 1999 990S-0133456.

PR 24 JUN 1999 990S-0133456.

PR 25 JUN 1999 990S-0133456.

PR 25 JUN 1999 990S-0133456.

PR 26 JUN 1999 990S-0133456.

PR 27 JUN 1999 990S-0133456.

PR 27 JUN 1999 990S-0133456.

PR 28 JUN 1999 990S-0133461.

PR 29 JUN 1999 990S-0134331.

PR 20 JUN 1999 990S-0134331.

PR 20 JUN 1999 990S-0134331.

PR 20 JUN 1999 990S-01344331.

PR 20 JUN 1999 990S-0134331.

PR 20
```

```
9900S - 0.14.52.24
9900S - 0.14.52.24
9900S - 0.14.52.24
9900S - 0.14.52.24
9900S - 0.14.52.31
9900S - 0.14.59.18
9900S - 0.14.63.88
9900S - 0.14.70.04
9900S - 0.14.70.05
9900S - 0.14.70.05
9900S - 0.14.70.05
9900S - 0.14.90.23
9900S - 0.15.90.23
99US-0145192.
99US-0145145.
99US-0145218.
                                                                              02-AUG-1999
02-AUG-1999
03-AUG-1999
04-AUG-1999
04-AUG-1999
05-AUG-1999
05-AUG-1999
                                                                                                                                                              06-AUG-1999;
09-AUG-1999;
09-AUG-1999;
10-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-0CH-1999;
13-0CH-1999;
13-0CH-1999;
13-0CH-1999;
14-0CH-1999;
                                                                                                                                                                                                                                                         18-AUG-1999;
20-AUG-1999;
20-AUG-1999;
                                                                                                                                                                                                                                      16-AUG-1999;
17-AUG-1999;
                                                                                                                                                                                                            12-AUG-1999
13-AUG-1999
                                                                                                                                                                                                                                                                                                                                                   27-AUG-1999)
30-AUG-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-SEP-1999,
29-SEP-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-0CT-1999;
08-0CT-1999;
                                                                                                                                                                                                                               3-AUG-1999
                                                                                                                                                                                                                                                                                                                        6-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                    SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-0CT-1999
                                                                                                                                                                                                                                                                                                                                                                                       SEP-1999
                                                                                                                                                                                                    11-AUG-1
```

```
CCTCGTCCACGAGGTGAGGAAACCCTAGCGACCGACCATGGCGTTGCTCC 114
                                                                                                                                                                                                                                                                                                                                                                                                    311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuArgLysValTyrAspGlnMetProGluProArgTyrValValSerMe 150
                                                                                                                                                                                                                                                                                  211
                                                                                                                                                                                                                                                                                                                                                          212 CGCCCCCCACCGGCGATGTCGAAGACGGCCGAGTTCGTGGTCGTGGTCTTAAGG 261
                                                                                                                                                                                                                                   23
                                                                                                                                                                                                                                                                      33
                                                                                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                         34 ValAlaThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaAr
                                                                                                                                                                                                                                                                                                                                                                                   7 ProGlyLeuArgGlyPheArgIleLeuGlyLeuArgSerSerValGlyPr
                                                                                                                                                                                                                                                                                                                            165 GCCGCTGCGGGCGCCTCCCCGACGTCCCCAGCG...CCATACGGGGG
                                                                                                                                                                                                                                                                      23 oAlaValGlnAlaArgGly.Val......HisGlnSer
                                                                                                                                                                                                                                                                                                                                               50 gAlaValAlaProLysProSerSerArgGlyGluTyrValValAlaLysL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCCGCAAGGTTTATGACCAAATGCCTGAGCCTAGGTGGGTTATTTCAAT
                                                                                                                                                           Gaps: 3
Percent Identity: 66.822
                                                                                                                                                  214
                                                                                                                                                  Length:
                                                                                                                                                                                                                 to: 911
                                                                                                                                                                                                                Align seg 1/1 to: AAC43639 from: 1
        9905-0160980
9905-0160980
9905-0160404
9905-0161405
9905-0161405
9905-0161350
9905-0161350
9905-0161350
9905-0161350
9905-0161920
9905-0161930
 99US-0160815
                                                                                                                                                737.50
4.120
83.645
                                                                                                                                                                                     alignment_block:
US-09-525-867-1 x AAC43639
                                                                                                                                                 Quality:
                                                                                                                                                           Ratio:
Percent Similarity:
21-0CT-1999;
22-0CT-1999;
22-0CT-1999;
25-0CT-1999;
25-0CT-1999;
26-0CT-1999;
26-0CT-1999;
26-0CT-1999;
28-0CT-1999;
28-0CT-1999;
28-0CT-1999;
                                                                                                                                         alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        150 1
                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   512
```

```
18 - JUN - 1999,
                                                                                                                                                                                                                                                                                                                                                                         02-AUG-1999;
02-AUG-1999;
03-AUG-1999;
04-AUG-1999;
04-AUG-1999;
05-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          12-AUG-1999;
13-AUG-1999;
13-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                   2-AUG-1999
                                                                                              Hybridisation assay, genetic mapping, gene expression control, protein identification, signal transduction pathway, metabolic pathway, promoter; termination sequence; ss.
                        seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC35686
                                                                                  Arabidopsis thaliana DNA fragment SEQ ID NO: 14712.
200 sileLysArgGluArgArgLeuGlnileTrpTyrArgArg 213
             662 GATCAACAGGCGTAAGGATTTCCTTCACTGGTGGACCAAG 701
                                     seq_documentation_block:
ID AAC36686 standard; DNA; 937 BP
                                                                                                                                                                          990S-0121825
990S-0123180
990S-0123180
990S-0123180
990S-0125788
990S-0126264
990S-0126246
990S-0126246
990S-0126469
990S-0130891
990S-0131449
990S-0132486
990S-0132486
990S-0132486
990S-0132486
990S-0132486
990S-0134218
                                                                                                                                                                                                                                                                                                                                                                                                                                            990S-0138847
990S-0139119.
990S-0139452.
990S-0139453.
990S-0139492.
                                                                                                                                                             25-FEB-2000; 2000EP-0301439
                                                                    17-OCT-2000 (first entry)
                                                                                                                         Arabidopsis thallana
                                                                                                                                                                                                                01-APR-1999;
06-APR-1999;
08-APR-1999;
                                                                                                                                                                                                                                               21-APR-1999;
23-APR-1999;
23-APR-1999;
                                                                                                                                     EP1033405-A2.
                                                                                                                                                                                             23-MAR-1999;
25-MAR-1999;
29-MAR-1999;
                                                                                                                                                  06-SEP-2000
                                                         AAC36686;
                                                                                                                                                                                                                                                                   28-APR-19
                                                                                                                                                                                                                                                                                     04 - MAY - 15
05 - MAY - 15
06 - MAY - 19
06 - MAY - 19
07 - MAY - 19
```

us-09-525-867-1.rng

99US-0149368

```
24 AlaValGlnAlaArgGlyVal......HisGlnSerValAlaThrAs 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Identity: 68.182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1
       990S - 0.149175

990S - 0.149175

990S - 0.149426

990S - 0.149929

990S - 0.149929

990S - 0.149929

990S - 0.149929

990S - 0.151066

990S - 0.151066

990S - 0.1510884

990S - 0.151088

990S - 0.151089

990S - 0.151089
                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0160768.
99US-0160770.
99US-0160814.
99US-0160815.
99US-0160981.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990S-0161404
990S-0161405.
990S-0161406.
990S-0161359.
990S-0161360.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0161920.
99US-0161992.
99US-0161993.
99US-0162142.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: AAC36686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
Quality: 725.00
Quality: 4.290
Percent Similarity: 85.354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-525-867-1 x AAC36686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-OCT-1999;
28-OCT-1999;
29-OCT-1999;
                           20-AUG-1999;
20-AUG-1999;
20-AUG-1999;
23-AUG-1999;
25-AUG-1999;
26-AUG-1999;
                                                                                            27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
                                                                                                                                    31-AUG-1999;
01-SEP-1999;
07-SEP-1999;
10-SEP-1999;
                                                                                                                                                                                  15-SEP-1999;
16-SEP-1999;
20-SEP-1999;
                                                                                                                           30-AUG-1999,
                                                                                                                                                                           3-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -0CT-1
```

```
Hybridisation assay, genetic mapping, gene expression control, protein identification, signal transduction pathway, metabolic pathway, promoter, termination sequence; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149 erMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSer 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         209
                                                                                                                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99 roArgTyrAspMetAspArgPheGlyValValPheArgAlaSerProArg 115
65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC38037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160 ererecerceacareaceactrecracaceagacergerecreer
                                                                                                                                                                                                                                                                      49 laArgAlaValAlaProLysProSerSerArgGlyGluTyrValValAla
                                                                                                                                                                                                                                                                                                                            LysLeuAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360 CTCGCTACGATCTCGATCGATTCGGTATCATCTTCAGGCCTAGTCCTCGC
                                                                                                                    pGlyProSerSer.....ThrGlnProAlaLeuProLysA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  199 rgLyslleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             660 AGAAAATCAACAGGCGCAAGGATTTCTTGCATTGGTGGAACAAG 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana DNA fragment SEQ ID NO: 19562.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:

ID AAC38037 standard; DNA; 976 BP.

XX

XX

XX

AC38037;

DT 17-OCT-2000 (first entry)

XX

Brabidopsis thaliana DNA fragment

XX

KW Hybridisation assay; genetic mapp;

KW Frotein identification; signal transported in identification; signal identification; signal identif
                                                                                                                                                                                                                                                                                                                                                                                                                                     99
                                                                                                                    37
```

99US-0144	99US-0144	990S-0144	990S 0144	99US-0144	99US-0144	99US-0144	99US-0144	990S-0144	99US-0144	99US-0145	99US-0145	99US-0145	990S-0145	0910-0140	9905-0145	99115-0145	990S-0145	99US-0145	990S-0145	990S-0145	990S-0145	990S-0145	9905-0146	99115-0146	99US-0147	9908-0148	9908-0148	99US-0148	99US-0148	99US-01493	99US-0149	990S-0149	990S-0149	9905-0149	990S-0149	990S-0149	990S-0150	99US-01508	99US-0151(990S-0151	99US-01513	99US-01514	9908-01519	22010-2026	99US-01537	99US-01540	99us-0154(99US-01547	9908-01551	99US-01556	99US-01564	99US-0156	99US-0157	990s-01578								
16-JUL-1999;	16-JUL-1999;	19-JUL-1999;	19-JUL-1999;	19-JUL-1999;	19-JUL-1999;	19-JUL-1999;	20-JUL-1999;	20-JUL-1999;	21-JUL-1999;	21-JUL-1999;	21-JUL-1999;	22-JUL-1999;	22-JUL-1999;	22-JUL-1999;	23-71111999;	23-,1111,-1999	23-JUL-1999;	26-JUL-1999;	27-JUL-1999;	27-JUL-1999;	27-JUL-1999;	28-JUL-1999;	02-406-1999;	2-AIIG-199	3-AUG-1	04-AUG-1999;	04-AUG-1999;	05-AUG-1999;	05-AUG-1999;	06-AUG-1999;	06-AUG-1999;	09-AUG-1999;	09-AUG-1999;	10-AUG-1999;	12-216-1999;	13-AUG-1999;	13-AUG-1999;	16-AUG-1999;	17-AUG-1999;	18-AUG-1999;	20-AUG-1999;	20-AUG-1999;	23-AUG-1999;	23-AUG-1999;	25-AUG-1999;	26-AUG-1999;	27-AUG-1999;	27-AUG-1999;	30-AUG-1999;	31-AUG-1999;	OI-SEP-1999;	10 - SEP-1999;	13-SEP-1999;	15-SEP-1999;	16-SEP-1999;	20-SEP-1999;	22-SEF-1999;	24-SEP-1999:	28-SEP-1999;	29-SEP-1999;	04-00T-1999; 05-00T-1999;	06-0CT-1999;
PR	ማ t	ማ ሀ	r P	PR	유명	or c	, ad	PR	PR	PR	PR	PR	χ. Έ	7 C	7 d	2 0	PR	PR	PR	P.P.	<u>ማ</u> ያ	7 t	7 O	. n	. H	PR	ማማ	ም	ም አ																														PR			. G.
				-																			•																					****																		_
																-																																														
99US-0125788.	990S-0126264. 990S-0126785	990S-0127462.	99US-0128234.	990S-0128714.	99US-U129845.	990S-0130449	99US-0130510.	99US-0130891,	99US-0131449.	990S-0132048.	990S-0132407.	9903-0132464. 9903-0132465	99US-0132485:	99US-0132487	99US-0132863.	99US-0134256.	99US-0134218.	99US-0134219.	99US-UI3422I.	99US-UI343/U.	9903 0134/08. 9918-0134941	99US-0135124	99US-0135353.	99US-0135629.	99US-0136021.	99US-0136392.	99US-0136782.	99US-0137222.	99US-0137528.	990S-0137502.	9908-013//24.	9903-0138094.	9903-0138340. 99118-0138847	990S-0139119	99US-0139452.	99US-0139453.	99US-0139492.	99US-0139454.	990S-0139455.	9905-0159456. 9976-0139457	9903 0133437. 9918-0139458	99US-0139459.	99US-0139460.	99US-0139461.	990S-0139462.	9905-0159465. 99118-0139750	99US-0139763,	99US-0139817.	99US-0139899.	99US-0140353.	9903-0140394. 9903-0140695	99US-0140823.	99US-0140991,	99US-0141287.	990S-0141842.	9903-0142134. 9903-0142055	99US-0142390.	99US-0142803.	99US-0142920.	99US-U142977.	990S-0143542.	99US-0144005.
23-MAR-1999;																																																											09-JUL-1999;			
PR																																																														

```
99 roArgTyrAspMetAspArgPheGlyValValPheArgAlaSerProArg 115
                                                                                                                                                                                                                                                                                                                                                                                                                                            GINSerAspValMetIleValAlaGlyThrLeuThrAsnLySMetAlaPr 132
                                                                                                                                                                                                                                                                                                                                                                                                                                 411
                                                                                                                                                                                                                                                                                                                    261
                                                                                                                                                                                                                                                                                                                                                                       461
                                                                                                                                                                                                                                                                                          37
                                                                                                                                                                                                                                                                                                            49
                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                          66
                                                                                                                                                                                                                                                                                24 AlaValGlnAlaArgGlyVal......HisGlnSerValAlaThrAs
                                                                                                                                                                                                                                                                                                                                     49 laArgAlaValAlaProLysProSerSerArgGlyGluTyrValValAla
                                                                                                                                                                                                                                                                                                                                              LysLeuAspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProMe
                                                                                                                                                                                                                                                                                                                                                                                         tThrPheGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAlaP
                                                                                                                                                                                                                                                                                                                                                                                                                           37 pGlyProSerSer......ThrGlnProAlaLeuProLysA
                                                                                                                                                                                                                              Gaps: 2
Percent Identity: 68.182
                                                                                                                                                                                                                       Length:
                                                                                                                                                                                                                                                                    to: 976
                                                                                                                                                                                                                                                                    Align seg 1/1 to: AAC38037 from: 1
99US-0158029.
99US-0158232.
99US-0158286.
99US-0159294.
99US-0159295.
99US-0159339.
                                                   99US-0159331,
99US-0159637.
99US-0159638.
                                                                              99US-0160741
                                                                        99US-0159584
                                                                                          99US-0160768
                                                                                                        99US-0160814
                                                                                                                                                                                99US-0161920
99US-0161992
                                                                                                                                                                                                   99US-0162142
                                                                                                                                                                                                                     Quality: 725.00
Ratio: 4.290
Milarity: 85.354
                                                                                                                                                                                                                                                       US-09-525-867-1 x AAC38037
                                                                                                               99US-01
                                                                                                                                   99US-01
                                                                                                                                                                                                                              Ratio:
Percent Similarity:
            28-OCT-1999;
28-OCT-1999;
                                                                                                                                                                         26-OCT-1999
                                                                                                                                                                                                                alignment_scores
                                                                                                                                                                                                                                                 alignment_block
                                                                                                                                                                                                                                                                                                                                                                                                                                362
                                                                                                                                                                                                                                                                                                                                                                                                                                                          412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162
                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                      312
                                                                                                                                                                                                                                                                                                                                                                                                                                             116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132
```

```
Hybridisation assay, genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway; promoter; termination sequence; ss.
                                          182
                                                             611
                    56.1
                                                                                   182 yCysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGlnA 199
                                                                                              seq_name:./SIDS2/gcgdata/geneseq/genesegn/NA2000.DAT:AAC41785
                                       149 erMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSer
            199 rgLyslleLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                                                                                                             662 AGAAAATCAACAGGCGCAAGGATTTCTTGCATTGGTGGAACAAG 705
                                                                                                                                                                                                                                                                 Arabidopsis thaliana DNA fragment SEQ ID NO: 33130.
                                                                                                                                                                                         seq_documentation_block:
ID AAC41785 standard; DNA; 1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0130077.
99US-0130449.
99US-0130510.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      990S-0130891.
990S-0131449.
990S-013248.
990S-0132484.
990S-0132486.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        990S-0132863.
990S-0134256.
990S-0134218.
990S-0134219.
                                                                                                                                                                                                                                                                                                                                                                                                                          990S-0123180.
990S-0123548.
990S-0125788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0126264.
99US-0126785.
99US-0127462.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0128234.
99US-0128714.
99US-0129845.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0135523,
99US-0135629,
99US-0136021,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0134370
99US-0134768
                                                                                                                                                                                                                                                                                                                                                                                            25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0121825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0132487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0135124
                                                                                                                                                                                                                                            17-0CT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-01
                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-MAY-1999;
05-MAY-1999;
06-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-MAY-1999

06-MAY-1999

06-MAY-1999

07-MAY-1999

11-MAY-1999

14-MAY-1999

14-MAY-1999

14-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999

11-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                          05-MAR-1999)
09-MAR-1999)
23-MAR-1999)
25-MAR-1999)
01-APR-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-APR-1999;
21-APR-1999;
23-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-APR-1999;
08-APR-1999;
16-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-MAY-1999;
21-MAY-1999;
24-MAY-1999;
25-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                   EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-APR-1999;
30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                         36-SEP-2000
                                                                                                                                                                                                                         AAC41785;
```

9990	990S-016136(990S-016136(990S-0161920 990S-0161993
04 - Add - 1999 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	26-0CT-1999; 26-0CT-1999; 28-0CT-1999; 28-0CT-1999; 28-0CT-1999;
张氏族 B.	
99085 - 0136392 - 9908 - 0136392 - 9908 - 0137528 - 9908 - 0137528 - 9908 - 0137528 - 9908 - 0137528 - 9908 - 0137528 - 9908 - 0137528 - 9908 - 0137528 - 9908 - 0138540 - 9908 - 0139452 - 9908 - 0139452 - 9908 - 0139452 - 9908 - 0139452 - 9908 - 0139453 - 9908 - 0139453 - 9908 - 0139453 - 9908 - 0139453 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 0139456 - 9908 - 014280 - 9908 - 014280 - 9908 - 014280 - 9908 - 014280 - 9908 - 014433 - 9908 - 014433 - 9908 - 014433 - 9908 - 0144433 - 9908 - 0144433 - 9908 - 01444433 - 9908 - 01444433 - 9908 - 0144683 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 014508 - 9908 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 9008 - 900	990S-0145951. 990S-0146386. 990S-0146388. 990S-0146389.
22 - MAY 1999 23 - MAY 1999 03 - JUN 1999 04 - JUN 1999 06 - JUN 1999 10 - JUN 1999 10 - JUN 1999 11 - JUN 1999 12 - JUN 1999 13 - JUN 1999 14 - JUN 1999 15 - JUN 1999 16 - JUN 1999 17 - JUN 1999 18 - JUN 1999 19 - JUN 1999 19 - JUN 1999 10 - JUN 1999 11 - JUN 1999 11 - JUN 1999 12 - JUN 1999 13 - JUN 1999 14 - JUN 1999 16 - JUN 1999 17 - JUN 1999 17 - JUN 1999 18 - JUN 1999 19 - JUN 1999 19 - JUN 1999 19 - JUN 1999 19 - JUN 1999 10 - JUN 1999 10 - JUN 1999 11 - JUN 1999 11 - JUN 1999 12 - JUN 1999 13 - JUN 1999 14 - JUN 1999 15 - JUN 1999 16 - JUN 1999 17 - JUN 1999 18 - JUN 1999 18 - JUN 1999 19 - JUN 1999 19 - JUN 1999 10 - JUN 1999 10 - JUN 1999 11 - JUN 1999 12 - JUN 1999 13 - JUN 1999 14 - JUN 1999 15 - JUN 1999 16 - JUN 1999 17 - JUN 1999 18 - J	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

```
Meningococcus B; MenB; ds.
 Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic; antigen; vaccine; diagnosis; infection; antibacterial; identification;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         roAlaLeuArgLysValTyrAspGlnMetProGluProArgTyrValVal 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            838 TCAATGGGAAGTTGTGCCAATGGATGTGGATACTATCACTACTCCTACTC 887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              441 GCCGTCGCCGCTGCCTCGGTCTCTCACCTCCACATCCCTTCCCGCTCT 490
                                                                                                                                                                                                                                                                                                                               99 ProArgTyrAspMetAspArgPheGlyValValPheArgAlaSerProAr 115
                                                                                                                                                                                                                                                                                                                                                                                                                                     688 GCTCGCTACGATCTCGATCGGTATCATCTTCAGGCCTAGTCCTCG 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gGlnSerAspValMetIleValAlaGlyThrLeuThrAsnLysMetAlaP 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               738 CCAGICIGALIGIAIGALIGICGCCGGIACICTIACCAAIAAGAIGGCIC 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSerTyrSe 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rValValArgGlyCysAspArgIleValProValAspIleTyrIleProG 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       888 GGTGGTTCGAGGATGTGACAGAATTGTCCCAGTCGACATATACGTCCCGG 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                182 lyCysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGlnLeuGln 198
                                                                                                                                                                                                                                                                                     541 CCICCCCICCICCICCIGGICICICIAAAGCGGCCGAATIIGIGAICICC 590
                                                                                                                                                                                                                                                                                                                                                                               etThrPheGlyLeuAlaCysCysAlaValGluMetMetHisMetAlaAla 98
                                                                                                                                                        37 pGlyProSerSer......ThrGlnProAlaLeuProLysA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N. meningitidis partial DNA sequence gnm_16 SEQ ID NO:16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAA81468
                                                                                                                                                                                                                         #91 CTCTCCCTCCCACATCACCGACTTCCTACAGACCTGGTCCTCCTTCGA
                                                                                                                                                                                                                                                            49 laArgAlaValAlaProLysProSerSerArgGlyGluTyrValValAla
                                                                                                                                                                                                                                                                                                                 LysLeu. AspAspLeuValAsnTrpAlaArgArgSerSerLeuTrpProM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           988 AAGAAAATCAACAGGGGGCAAGGATTTCTTGCATTGGTGGAACAAG 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199 Arglys1leLysArgGluArgArgLeuGlnIleTrpTyrArgArg 213
                                                    Gaps: 4
Percent Identity: 66.834
                                     Length:
                                                                                                                             to: 1266
                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
ID AAA81468 standard; DNA; 72750 BP
99US-0162142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                            to: AAC41785
                                   686.50
4.111
83.920
                                                                                     alignment_block:
US-09-525-867-1 x AAC41785
                                      Quality:
                                                            Percent Similarity:
                                                 Ratio:
29-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-DEC-2000
                        alignment_scores
                                                                                                                             Align seg 1/1
                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         938
```

```
The present invention describes methods of obtaining immunogenic proteins from Neisseria genomic sequences, AAA81453 to AAA82414
represent specifically claimed Neisseria meningitidis genomic DNA sequences, AAA81250 to AAA82653 represent Composerial DNA sequences and AAB25620 to AAB2652 represent Neisseria meningitidis DNA sequences; and AAA81254 to AA881452 sepresent Neisseria meningitidis DNA sequences; and AAA81254 to Solation of Neisseria meningitidis DNA sequences; and AAA8132 to AAA81452 represent Neisseria meningitidis DNA sequences; and antibodies sequences, which are all used in the exemplification of the present invention. The nucleic acid sequences, protein sequences, and antibodies against them. can be used as a medicament (or in the manufacture of a composition can be used as a medicament (or in the manufacture of a medicament) for treating, preventing or diagnosing infection due to Neisserial bacteria. For example, some of the identified proteins could be components of vaccines against meningococcus B; against all serotypes; and/or against all pathogenic Neissariae. Identification of sequences and/or against all pathogenic Neissariae. Identification of sequences of room the bacterium will also facilitate production of bloicgical probes, particularly organism-specific probes. Attempts to make efficacious Meningococcus B vaccines have failed mainly due to antigen tolerance. Multivalent vaccines have failed mainly que to antigen tolerance. Multivalent vaccines have also been tried but none have successfully expected or surface sequences may provide an opportunity to identify secreted or surface exposed proceins that may be presumed targets for the immune system and which are not antigenically variable or at least more conserved than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scarlato V;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Isolated nucleotide sequences of Neisseria meningitidis which can be used in the diagnosis and treatment of N. meningitidis infection and other Neisserial infections, for example, N.gonorrhoea -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 72750 BP; 17518 A; 19945 C; 18810 G; 16477 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53876 TICALCACCACCAGCGCGGATACGGTGCTGAACTATATGCGTACCGGTTC 53827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tettelin H, Venter JC;
Ratti G, Scarselli M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62 TyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgSerSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Identity: 73.944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 7; Page 406-428; 1760pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to reverse of: AAA81468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peterson J,
C, Mora M,
                                                                                                                                                                                                                          99WO-US23573.
                                                                                                                                                                                                                                                                                                   98US-0103794.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
.US-09-525-867-1 x AAA81468/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              613.00
4.609
93.662
Neisseria meningitidis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Galecti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Masignani V, Galeott
Rappuoli R, Pizza M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hickey E,
                                                                                                                                                                                                                                                                                                                                                                                                                         (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-318079/27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                    WO200022430-A2
                                                                                                                                                                                                                                                                                                   09-0CT-1998;
                                                                                                                                                                                                                                                                                                                                            30-APR-1999;
                                                                                                                                                 20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores
```

```
Masignani V;
Rappuoli R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention describes the full length genome of Neisseria meningitidis B (NMB). The sequences in AAF21544 and AAF21607 to AAF21613 represent fragments of the NMB genomic sequence, as the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Neisseria meningitidis; Neisseria gonorrheae; immunogenic; vaccine; diagnosis; antigen; detection; infection; gene therapy; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53627
                           53776 ACGCGGGTATGCCGCGTTACGACCTTGACCGTTTCGGTATTATTTCCGT 53727
                                                                                          53677
                                                                                                                                                                                    161
                                                                                                                      nLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGluProA 145
                                                                                                                                                                                                                                                                                                         eTyrlleProGlyCysProProThrAlaGluAlaLeuLeuTyrGlylleL 195
                                                                                                                                                                                                                                            162 TyrSerTyrSerValValArgGlyCysAspArgIleValProValAspIl 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Venter JC,
Scarlato V,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Neisseria meningitidis B nucleotide sequence SEQ ID NO:1.
                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAF21544
                                                                                                                                      TATTCTTATTCCGTTGTGCGGGTGCCGACCGCGTCGTGCTGGTAGATGT
isMetAlaAlaProArgTyrAspMetAspArgPheGlyValValPheArg
                                                           112 AlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeuThrAs
                                                                                       53726 ccercccccccccccccccccccccccarcarcarccccca
                                                                                                                                                                                   rgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pizza M, Hickey E, Peterson J, Tettelin H,
Galeotti C, Mora M, Ratti G, Scarselli M, S
Frazer CM, Grandi G;
                                                                                                                                                                                                                                                                                                                                                                                         Claim 7; Appendix A; 692pp; English.
                                                                                                                                                                                                                                                                                                                                                                       euGlnLeuGlnArgLysIleLysArg 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_documentation_block:
ID AAF21544 standard; DNA; 349980 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-APR-1999; 99US-0132068.
08-OCT-1999; 99WO-US23573.
28-FEB-2000; 2000GB-0004695.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-MAR-2000; 2000WO-US05928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-MAR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CHIR ) CHIRON CORP. (GENO-) INST GENOMIC RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neisseria meningitidis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-647603/62.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200066791-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF21544;
                                                                                                                                                                                                                                                                          53576
                                                                                                                                                                                                                                                                                                         178
                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                      128
                                                                                                                                                                                 145
```

```
sequences which overlap each other at the beginning and each sequences which overlap each other at the beginning and each deach sequence by 49980 bp of AAF21544 is repeated at the beginning of AAF21607, the last 49980 bp of AAF21567 are repeated at the beginning of AAF21607, the last 49980 bp of AAF21568 encode the beginning of AAF21607, and so on). AAF21545 to AAF21589 encode the Neisseria proteins given in AAB58550 to AAB58593, and AAF21589 encode the Neisseria proteins given in AAB58550 to AAB58593, and AAF21589 to AAF21606 represent PCR primers which are used in the exemplification of the present invention. The NMB genome and fragments from it have antibacterial activity, and can be used in vaccines and gene therapy. Neisserial activity, and can be used in vaccines which binds to the proteins can be used in compositions for treating or preventing infection due to Neisserial bacteria or as a diagnostic reagent for detecting the bacteria. Computers, computer memory, computers storage medium or computer databases can be used in a search to identify open reading frames (ORFs) or coding sequences within the NMB genome. The DNA sequences provide further opportunities to find antigenic or immunogenic proteins which are used.
   sequence was too long to go in a record on its own it was split into 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 349980 BP; 83241 A; 85091 C; 95206 G; 86442 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    246984 TTCATCACCACCAGGGGGATACGGTGCTGAACTATATGCGTACCGGTTC 247033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              247134 CCGTCCCCCGTCAGGCCGACCTGATGATGATGTGGCGGGTACGCTCACCAA 247183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247334 TTATGTGCCGGGTTGTCCGCCGACTGCGGAAGCCCTGATTACGGCCTGA 247383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   247133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                247234 GCIGGGTATTGICTATGGGCTCATGTGCCAACGGCGGGGGGTATTATCAC 247283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     162 TyrSerTyrSerValValArgGlyCysAspArgIleValProValAspIl 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178 eTyrileProGlyCysProProThrAlaGluAlaLeuLeuTyrGlyIleL 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAA81490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   247034 GITGIGGCCGGITACTITCGGCTTGGCCTGCTGCCCGTGGAAATGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            247084 ACGCGGTATGGCGCGTTACGACCTTGACCGTTCGGTATTATTTTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112 AlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeuThrAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       128 nLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGluProA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62 TyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgSerSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95 isMetAlaAlaProArgTyrAspMetAspArgPheGlyValValPheArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            145 rgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               78 rLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValGluMetMetH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                247284 TATTCTTATTCCGTTGTGCGCGGTGCCGACCGCGTCGTGCCGGTAGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Identity: 73.944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from: 1 to: 349980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247384 TTCAGCTCCAACAAAAATCAAGGGC 247409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
ID AAA81490 standard; DNA; 1437668 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    195 euGlnLeuGlnArgLysIleLysArg 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: AAF21544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93.662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         613.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-525-867-1 x AAF21544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_block:
```

246984 TTCATCACCAGCGCGGATACGGTGCTGAACTATATGCGTACCGGTC 247033

62 TyrValValAlaLysLeuAspAspLeuValAsnTrpAlaArgArgSerSe

to: 1437668

to: AAA81490 from: 1

Align seg 1/1

247034 GTTGTGGCCGGTTACTTTCGGCTTGGCCTGCGCGCGGGGAAATGATG

78 rLeuTrpProMetThrPheGlyLeuAlaCysCysAlaValGluMetMetH

78

247133 111

247084 ACGCGGGTATGGCGCGTTACGACCTTGACCGTTTCGGTATTATTTCCGT

112 AlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeuThrAs

isMetAlaAlaProArgTyrAspMetAspArgPheGlyValValPheArg

95

13

```
Proteins from Neisseria genomic sequences. AAAB1453 to AAAB2414

Proteins from Neisseria genomic sequences. AAAB1453 to AAAB2414

represent specifically claimed Neisseria meningitidis genomic DNA sequences; AAAB1260 to AAAB1261 to AAAB2565 represent DNA sequences and their corresponding proteins; AAAB1254 to AAAB1259 and AAAB1304 to AAAB1321 represent FCR primers used in the isolation of Neisseria meningitidis MenB polynucleotide On the present invention: The nucleic acid sequences, proteins sequences; and antibodies sequences, which are all used in the exemplification of the present invention. The nucleic acid sequences, proteins sequences, and antibodies against them, can be used in the manufacture of a composition can be used as a medicament (or in the manufacture of medicament) for treating, preventing or diagnosing infection due to medicament) for treating, preventing or diagnosing infection due to be components of vaccines against Meningococcus B; against all pathogenic Neissariae. Identification of sequences and/or against all pathogenic Neissariae. Identification of sequences and/or against all pathogenic Neissariae. Identification of sequences and/or against all pathogenic Neissariae. Identification of sequences may provide an opportunity to identify secreted or surface sequences may provide an opportunity to identify secreted or surface exposed proteins that may be presumed targets for the immune system and which are not antigenically variable or at least more conserved than
                                                                                                                                      Neisseria meningitidis, Neisseria gonorrheae; genome; immunogenic;
antigen; vaccine; diagnosis; infection; antibacterial; identification;
Meningococcus B; MenB; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1437668 BP; 344338 A; 353206 C; 385074 G; 355045 T; 5 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isolated nucleotide sequences of Neisseria meningitidis which can be used in the diagnosis and treatment of N. meningitidis infection and other Neisserial infections, for example, N.gonorrhoea - .
                                                                                                 meningitidis B full length genome DNA sequence SEQ ID NO:1068.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        present invention describes methods of obtaining immunogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tettelin H, Venter JC;
Ratti G, Scarselli M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 7; Page 866-1272; 1760pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peterson J,
C, Mora M,
                                                                                                                                                                                                                                                                                                                                              99WO-US23573.
                                                                                                                                                                                                                                                                                                                                                                                  98US-0103794
99US-0132068
                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hickey E,
, Galeotti
                                                                                                                                                                                                                         Neisseria meningitidis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Masignani V, Galeott
Rappuoli R, Pizza M;
                                                                                                                                                                                                                                                                                                                                                                                                                                            (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-318079/27
                                                                                                                                                                                                                                                             WO200022430-A2.
                                                           04-DEC-2000
                                                                                                                                                                                                                                                                                                                                          08-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                  09-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                     30-APR-1999;
                                                                                                                                                                                                                                                                                                     20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Frazer CM,
                     AAA81490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
```

Scarlato V;

```
Genomic library; bacteria; human upper airway; otitis media; sinusitis;
bronchopulmonary; endocarditis; meningitis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genomic library for identifying diagnostic and therapeutic compositions, and for identifying virulence factors, regulatory elements and drug targets, comprises Moraxella catarrhalis nucleic acids -
                                                                                                                                                      247334 IIAIGIGCCGGCTIGICCCCCGACTGCGGAAGCCCTGAITTACGGCCTGA 247383
                                                                                                                 247234 GCTGGGTATTGTCTATGGGCTCATGTGCCAACGGCGGCGGCGTATTATCAC 247283
                                          145
                                                                                                                                                                                                                178 eTyrIleProGlyCysProProThrAlaGluAlaLeuLeuTyrGlyIleL 195
                                                                                                rgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHis 161
                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAF28543
247134 CCGTCCCCCCGTCAGGCCGACCTGATGATGTGGGCGGGTACGCTCACCAA
                                                          nLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGluProA
                                                                                                                                                                                                                                                                                                   247384 ITCAGCICCAACAAAAAICAAGCGC 247409
                                                                                                                                                                                                                                                                         euGlnLeuGlnArgLysIleLysArg 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΚĽ,
                                                                                                                                                                                                                                                                                                                                                                            ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Berg
                                                                                                                                                                                                                                                                                                                                                             seq_documentation_block:
ID AAF28543 standard; DNA; 58909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-JUN-2000; 2000WO-US16649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0140121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (INCY-) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patterson C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Moraxella catarrhalis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genomic fragment #30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VPI; 2001-041427/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200078968-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                  04-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-DEC-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lagace RE,
                                                                                                                                                                                                                                                                                                                                                                                                      AAF28543;
                                         128
                                                                                                145
                                                                                                                                                                                                                                                                         195
```

Percent Identity: 73.944 Length: Gaps:

613.00 4.609 93.662

Quality: Ratio:

alignment_scores

Percent Similarity:

alignment_block: US-09-525-867-1 x AAA81490

S

 $\overset{\mathsf{M}}{\times}$ 

```
Sequence 134525 BP; 41249 A; 26129 C; 26331 G; 40816 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49060 TIGGTACCAAGATCAAGTCCTAGGCAACCAACTTTTAACAGCGG 49011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49210 AGTICCAATICCGITATITCAACTACACTAAAAGAICTITCGAATIGGIC 49161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48910 GGAATGTTCAGTACGGATTCCTATAGTACTGTTCGGGGGAGTTGATAAGTT 48861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 49010 TACAGTAACAATGAAAATGGCTCCCTCTTTAGTGAGATTATATGAGCAAA 48961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141 etProGluProArgTyrValValSerMetGlySerCysAlaAsnGlyGly 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       173 eValProValAspIleTyrIleProGlyCysProProThrAlaGluAlaL 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91 alGluMetMetHisMetAlaAlaProArgTyrAspMetAspArgPheGly 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chloroplast DNA of true grasses - used to produce various DNA base sequences by decomposition of rice plant DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerArgGlyGluTyrValValAlaLysLeuAspAspLeuValAsnTrpAl 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aArgArgSerSerLeuTrpProMetThrPheGlyLeuAlaCysCysAlaV 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The sequence is that of the whole of rice chloroplast DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               124 yThrLeuThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           108 ValValPheArgAlaSerProArgGlnSerAspValMetIleValAlaGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GlyTyrTyrHisTyr...SerTyrSerValValArgGlyCysAspArgIl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps: 1
Percent Identity: 49.324
                                                                                                                                       Total base sequence of rice plant chloroplast DNA
                                                                                                                                                                                true grass; rice plant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to reverse of: AAQ04525
           AAQ04525 standard; DNA; 134525
                                                                                                                                                                                                                                                                                                                                                                                                                                            TOATSU CHEM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Fig 1; 20pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                 88JP-0251967
                                                                                                                                                                                                                                                                                                                                                        88JF-0251967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_block:
US-09-525-867-1 x AAQ04525/rev
                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427.50
3.562
81.081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1990-159709/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                            (MITK ) MITSUI
                                                                                                                                                                              Chloroplast;
                                                                                                                                                                                                                                                                   JP02100682-A.
                                                                                                                                                                                                                            Oryza sativa
                                                                                                                                                                                                                                                                                                                                                        07-OCT-1988;
                                                                                                                                                                                                                                                                                                                                                                                                 07-0CT-1988;
                                                                                           01-OCT-1990
                                                                                                                                                                                                                                                                                                              12-APR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1
                                                  AAQ04525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158
         The present invention relates to a Moraxella catarrhalis genomic library comprising of a combination of 41 nucleic acid molecules (see PAP20514-AAP20554). The library has a number of uses described in the specification e.g. is useful for aidentifying diagnostic and therapeutic compositions. M. catarrhalis (Branhamella catarrhalis) is a large acrobic, gram-negative diplococcus, normally found among the bacterial flora of human upper airways. M. catarrhalis is known to cause acute, localised infections such as ottitis media, sinusitis and bronchopulmonary infection and life-threatening, systemic diseases including endocarditis
                                                                                                                                                                                                                                                                                       other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26860 ATCACCCAAGCCGAGGTGGATAAAATGTTTT...TTGGGCAGATTGC 26906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         :|||
26907 CGATTIGACGCACACACCTIGCCAACTGGGGTCGCAAAAACTCCTTATGGC 26956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26810 ACCAACATACCAAGCAATACCCACAACAAGCCGTGAAATCATTGACGAT 26859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27205 .TATICGGIGGIGCAGGGGIGGIAAAAATCIIGCCIGIGGAIGIGIAIG 27253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 rProArgGlnSerAspValMetIleValAlaGlyThrLeuThrAsnLySM 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180 leProGlyCysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGln 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                   Sequence 58909 BP; 16632 A; 11699 C; 13199 G; 17379 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /SIDS2/gcgdata/geneseg/genesegn/NA1990.DAT:AAQ04525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98 AlaProArgTyrAspMetAspArgPheGlyVal...ValPheArgAlaSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36 ThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgAlaVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 lAlaProLysProSer..SerArgGlyGluTyrValValAlaLysLeuAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69 pAsp......LeuValAsnTrpAlaArgSerSerLeuTrpP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81 roMetThrPheGlyLeuAlaCysCysAlaValGluMetMetHisMetAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          etAlaProAlaLeuArgLysValTyrAspGlnMetProGluProArgTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163 rTyrSerValValArgGlyCysAspArgIleValProValAspIleTyrI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             147 ValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrTyrHisTyrSe
                                                                                                                                                                                                                                                                                                                                                                        Length: 177
Gaps: 5
Percent Identity: 49.718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to: 58909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27304 TTACAAGAGCATTCAAAAAGAACGCCGT 27333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LeuGlnArgLysIleLysArgGluArgArg 206
Claim 1; Page 263-277; 545pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to: AAF28543
                                                                                                                                                                                                                                                                                                                                                                        Quality: 431.50
Ratio: 3.104
nilarity: 78.531
                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-525-867-1 x AAF28543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block
                                                                                                                                                                                                                                                                                                                                                                                          Ratio:
Percent Similarity:
                                                                                                                                                                                                                                         and meningitis.
                                                                                                                                                                                                                                                                                                                                                     alignment_scores
```

130

197

141

124

from: 1 to: 134525

Length:

```
cuids which are expressed in hindburd and Alphahan tubble (HMT) tissue or head and nerve cord (HNC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant colls comprising the nucleic acids of the invention, recombinant production of the proteins, anticompositions comparisons the proteins a method of identifying inhibitors of the proteins, and compositions commissing the inhibitors of administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases consociated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant by a produce of the protein and protein and protein and administrate the presence of cat flea or other homologous nucleic acids and quantitate the presence of cat flea or other homologous nucleic acids and quantitate the presence of cat flea or other homologous nucleic acids and quantitate the presence of cat flea or other homologous nucleic acids and quantitate the presence of cat flea or other homologous nucleic acids and function of the proteins and their role in metabolism. The HMT and HMT and their metabolism and activity. The antibodies, and in assays to identify modulators (agonists and antagonists of HMT and/or HNC protein expression and activity. The Antibodies may also be used to downrequlate protein antibodies and antagonists may also be used to downrequlate protein expression and activity. The Antibodies may also be used to sugarned the presence of flea polypeptides in samples (e.g., by enzyma linked immunosorbent assay (ELISA)). The present sequence represents a cat flea (manuesorbent assay) the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to novel cat flea (Ctenocephalides felis) nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea infestations
                                                                                                                                                                                                                                                                                                                                                                                                                                          Cat flea; head and nerve cord nucleic acid; HNC; flea infestation; vaccine; antiparasitic; therapeutic target; diagnosis; detection; ss.
seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC95299
                                                                                                                                                                                                                                                                                                                                                                                          Cat flea head and nerve cord (HNC) cDNA, SEQ ID NO:1794.
                                                                                                         48810 TIATAGATGCCCTAACAAACTTCGTAAGAAGATATCGCGAGAA 48767
                                                                       190 euLeuTyrGlyIleLeuGlnLeuGlnArgLysIleLysArgGlu 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stinchcomb DT, Wisnewski N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 446 BP; 179 A; 52 C; 75 G; 139 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 26; Page 848; 964pp; English.
                                                                                                                                                                                                                                                 ВР
                                                                                                                                                                                                                     seq_documentation_block:
ID AAC95299 standard; cDNA; 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0128704
                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brandt KS, Gaines PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-656323/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200061621-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-APR-1999;
                                                                                                                                                                                                                                                                                                                                             19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-0CT-2000.
                                                                                                                                                                                                                                                                                              AAC95299;
```

```
The present sequence is a DNA which encodes an immunogenic portion of a prostate tumour protein. The encoded immunogen, or the DNA itself, can be used as a vaccine for the treatment of prostate cancer. The DNA \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                   130 MetAlaProAlaLeuArgLysValTyrAspGlnMetProGluProArgTy 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180 IleProGlyCysProProThrAlaGluAlaLeuLeuTyrGlyIleLeuGl 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           196 nLeuGlnArgLysIleLysArgGluArgArgLeuGlnIleTrpTyrArgA 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102 CATATICTGTAGTGAGGGGTTGTGATAGAATAGTACCAGTTGACATATAT 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202 GCTTCAAAAGAAAGTTAAACGAATGAAAACCCTGCAAATGTGGTATAGAA 251
                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    prostate prostate properties prop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1998.DAT:AAV61275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prostate; cancer; tumour; vaccine; immunogen; clone; ss.
                                                                                                                                                                                                                                                                                                                                              2 ATGGCTCCAGCGCTTCGAAAAGTTATGATCAAATGCCTGAACCACGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              erTyrSerValValArgGlyCysAspArgIleValProValAspIleTyr
Length: 84
Gaps: 0
Percent Identity: 86.905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    portions of of prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3' cDNA sequence of prostate tumour clone J1-21
                                                                                                                                                                                                                                       to: 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Polypeptides comprising immunogenic used in a vaccine for the treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 12; Page 48; 130pp; English.
                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
ID AAV61275 standard; cDNA; 789 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0020956.
97US-0806099.
97US-0904804.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US03492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-JAN-1999 (first entry)
418.00
5.160
96.429
                                                                                                                                                                                                                                   to: AAC95299
                                                                                                                                   alignment_block:
US-09-525-867-1 x AAC95299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-609886/51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dillon DC, Xu J;
   Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CORI-) CORIXA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9837093-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-1997;
01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252 AA 253
                                                                                                                                                                                                                                   Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
```

```
D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D X X D 
was identified by analysis of a subtracted cDNA library obtained by subtracting a prostate tumour cDNA expression library with a normal tissue cDNA library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCAAAAAGGGCCCCAGNGTTTGC.AAGGTTTAAGACCAGATGCCGGA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              etHisMetAlaAla.ProArgTyrAspMetAspArg.PheGlyValValP 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110 heArgAlaSerProArgGlnSerAspValMet1leValAlaGlyThrLeu 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 464 TITGGGGCCAGCCCGNGCCAGTCTGAGTNATGATTGTGGCNGGNANANTA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              143 uProArgTyrValValSerMetGlySerCysAlaAsnGlyGlyGlyTyrT 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   160 yrHisTyrSerTyrSerValValArgGlyCysAspArgIleValProVal 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           696 ACCGGGGGCCCGAAGGGGGANCCANCTTGCCNNCCAAAGNNAGAGGCGTG 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52 lAlaProLysProSerSerArgGlyGluTyrValValAlaLysLeuAspA 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36 ThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgAlaVa 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1998.DAT:AAV58509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       646 GGTTCCCAAACCCAGNAANCGGGGGGGGGGGGTTTGGGGGGCCAAGGGGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   316 ACCACTATTCCTAATNGGTGGTGAGGGGNTGCGACCGCATTGTGCCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..........MetThrPheGlyLeuAlaCysCysAlaValGluMetM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 564 ITTGNGGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ThrAsnLysMetAlaProAlaLeuArgLysValTyrAspGlnMetProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AspIleTyrIleProGlyCysProProThrAlaGluAlaLeuLeuTyrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193 ylleLeuGlnLeuGlnArgLyslleLysArgGluArgArgLeuGlnIleT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp.LeuValAsnTrpAlaArgArgSerSerLeuTrpPro......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       514 TGNANATNGCAGCAACCCCGNNAAGACATGGNCCGGTTTTGGGGGNGNTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 266 GAAATTNAAATCCCAGGGTGCCCACCNANGGCCGAGGCCCTGTTTTANGG
                                                                                                                                G; 195 T; 66 other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to: 789
                                                                                                                                                                                                                                                             Length: 189
Gaps: 5
Percent Identity: 58.201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to reverse of: AAV61275
                                                                                                                                Sequence 789 BP; 129 A; 240 C; 159
                                                                                                                                                                                                                                                                                                                                                                                   alignment_block;
US-09-525-867-1 x AAV61275/rev
                                                                                                                                                                                                                                                      411.00
3.067
70.899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
ID AAV58509 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rpTyrArgArg 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       166 GGTACCGCAGG 156
                                                                                                                                                                                                                                                             Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    596 ACTITGILG
                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    177
2000x8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  X X X Z
```

```
This sequence represents a human prostate tumour specific gene, and can be used in the method of the invention. The method is for detecting prostate cancer comprises contacting a biological sample with an agent able to bind an immunogenic portion of a prostate protein (such as encoded by this sequence). An antibody which binds to an immunogenic portion of the prostate protein, and the method can be used to detect, monitor progression of, or treat prostate cancers. The artibody may also be conjugated to a therapeutic agent for use in therapy of prostat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              useful
                                       Prostate tumour specific gene; human; prostate cancer; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel human prostate specific tumour protein and fragments for detecting and treating prostate cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               etHisMetAlaAla.ProArgTyrAspMetAspArg.PheGlyValValP 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36 ThrAspGlyProSerSerThrGlnProAlaLeuProLysAlaArgAlaVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52 lAlaProLysProSerSerArgGlyGluTyrValValAlaLysLeuAspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       646 GGTTCCCAAACCCAGNAANCGGGGGGGGGATTTGGGGGGCCAAGGGGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp.LeuValAsnTrpAlaArgArgSerSerLeuTrpPro......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to: 789
  prostate tumour specific gene J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps: 58.201 Percent Identity: 58.201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to reverse of: AAV58509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 1; Page 50; 141pp; English.
                                                                                                                                                                                                                                                               98US-0904809.
97US-0806596.
97US-0904809.
                                                                                                                                                                                                                            98WO-US03690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-525-867-1 x AAV58509/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411.00
                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-480805/41.
                                                                                                                                                                                                                                                                                                                                                   (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                             Хu
fragment of
                                                                                                                                          WO9837418-A2
                                                                                                     Homo sapiens
                                                                                                                                                                                                                          25-FEB-1998;
                                                                                                                                                                                                                                                                                                         01-AUG-1997;
                                                                                                                                                                                                                                                                 09-FEB-1998;
25-FEB-1997;
                                                           therapy; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores
                                                                                                                                                                                  27-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                             DC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancers.
                                                                                                                                                                                                                                                                                                                                                                                          Dillon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83
```

110 heArgAlaSerProArgGlnSerAspValMetIleValAlaGlyThrLeu 126

08-DEC-1998 (first entry)

AAV58509

210 rpTyrArgArg 213 ||||||||||||||||||166 GGTACCGCAGG 156

```
BC005954 Homo sapi
BC001715 Homo sapi
AF060512 Homo sapi
X65020 B.taurus mR
                                                                                     X65020 B.taurus mR
AX106251 Sequence
AX106251 Sequence
AX107856 Drosophil
AC007856 Drosophil
AC003315 Paracoccus
AC014169 Drosophil
AC00336 Drosophil
AC00336 Drosophil
AC00336 Drosophil
AC00336 Drosophil
AC00350 Drosophil
AC00350 Drosophil
AC0350 Drosophil
AC0350 Drosophil
AC0350 Drosophil
AC0350 Drosophil
AC51786 Sinorhica
AC25186 Sinorhica
AC01520 Neurospor
AC01520 Neurospor
AC01520 Neurospor
AC01520 Neurospor
AC01820 Neurospor
AC01821 Neurospor
AC01821 Neurospor
AC01821 Neurospor
AC01821 Acodacte
AC01827 Sinorhica
AC00864 Agrobacte
AC00884 Agrobacte
AC00884 Agrobacte
AC00884 Agrobacte
AC00884 Agrobacte
AC00884 Agrobacte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AJ35271 Rickettsi
AF007261 Reclinomo
AF288090 Reclinomo
AC005329 Homo sapi
AL078618 Streptomy
AL392148 Streptomy
AF110138 Nephrosel
AE077270 Sinorhizo
AJ245399 Sinorhizo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE002381 Neisseria
AX043922 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U52917 Thermus agu
X15917 Paramecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 787)
Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (02-APR-2001) National Institutes of Health, Mammalian
Gene Collection (MCC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BC005954 787 bp mRNA PRI 12-JUL-2001
Homo sapiens, clone MGC:14592 IMAGE:4276489, mRNA, complete cds
BC005954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                     BTPSSTSU
AX106251
AX140542
AC019889
AC007856
AEC03770
AC009888
PDENCOUVR
AC014169
                                                                                                                                                                                                                          AC010919
AC008336
AE003500
AF002997
YLIZ50340
RME2459865
AF029365
                                                                                                                                                                                                                                                                                                                                                                                                                          STPSST
AF185271
AF085637
AF008054
AE003884
NMA122491
PARMTCPL
AF002381
AK042381
AK042381
AK042381
                                                                                                                                                                                                                                                                                                                                                  BONADHPST
                                                                                                                                                                                                                                                                                                                                                                               AE005868
AF281035
ATNADHUO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RPXX02
AF007261
AF288090
AC005329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BC005954.1 GI:13543602
            DB
Query
Match Length
                                                                                                                                 83607
175124
224100
311043
13739
140685
163378
329709
                                                                                                                                                                                                                                                                                                      6229
299350
19614
                                                                                                                                                                                                                                                                                                                                                  911
951
10337
                                                                                                                                                                                                                                                                                                                                                                                                             951
1033
1033
11352
11352
11352
11352
11352
114488
114488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11488
11
                                          human.
                                        233
210.2
209
208.6
208.6
199.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1
BC005954
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REMARK
                                                                                                                                                   Result
            8
N
                                                                                                  Search time 1347.47 Seconds
(without alignments)
10088.296 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                           GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                  1472140 seqs, 8248589755 residues
                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                     ٠,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                  February 12, 2002, 16:51:49
                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                                     nucleic search, using sw model
                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_lnv:*
em_htg_rod:*
em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_un:*
em_vi:*
em_htgo_hum:*
em_htgo_inv:*
em_htgo_rod:*
                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                                            US-09-525-867-9
824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_vi:*
em_ba:*
em_fun:*
em_hum:*
em_in:*
em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_pl:*
em_ro:*
em_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_htg.*
gb_ov.**
gb_ov.**
gb_pat.*
gb_pr.**
gb_pr.**
gb_rc.**
gb_rc.**
gb_rc.**
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_pat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_sy:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_ov:*
```

DB seq ]

Minimum I Maximum I

Database

Perfect score:

Title:

Sequence:

OM nucleic

: 00

Scoring table:

Searched:

a

```
/lab_host="DH10B-R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC001715.1 GI:12804588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   info@bcgsc.bc.ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                 481
                                                                                              599
                                                                                                                                                                                                                           719
                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                         779
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                539
                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                                                        RESULT
BC001715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                              q
                                                                                                                                                                                       q
                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                         ò
                                                               g
                                                                                             ð
                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="Unknown (protein for MGC:14592)"
/protein_id="AAH0594;1"
/db_xref="G1:13543603"
/translation="MAVLSAPGLRGFRILGIRSSVGLAVQARGVHQSVATDGPSSTQP
ALPRARAVARRESSRGEYVARLDDEVNWARRSSLENPWITGALCCAPWHWAAPRYD
MDRFGYWFRASPROSDWIYARGTHRKMARPALRKYDOMPEPRYVSMGSCANGGGYY
HYSYSVVRGCDRIVPVDIXIPGCPPTARALLYGILQICARIKRERRICIWYRR:
                                                               Genome
CA 94305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                              be found
                           CDNA Library Preparation: CLONTECH Laboratories, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 9431
Web site: http://www-shgc.stanford.edu
Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
R. M.
                                                                                                                                                                         Clone distribution: MGC clone distribution information can be four through the I.M.A.G.E. Consortium/ZLNL at: http://image.llnl.gov Series: IRAL Plate: 21 Row: K Column: 20 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF analysis, Similarity but not identity to protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 TCCTTGGTCTGCGCTCCAGCTGGGCCTGGCTGTGCAGCCACGAGGTGTCCATCAGAGCG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 TGGCCACCGATGGCCCAAGCAGCACCCCAGCCTGCCAAAGGCCAGAGAGCCGTGGCTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttogcaaggtctacgaccagatgccggagccgcgctacgtggtctccatggggagctgcg 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cgcgccagtccgacgtcatgatcgtggccggcacactcaccaacaagatggccccagcgc 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 Grergaaggeegaaggeeaagargeegreergreagereergeegreegga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119 teettggtetgegeteeagegtgggeeeggetgtgeaggeaegaggtgteeateagageg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ccaaacccagcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tgcacatggcagcacccggctacgacatggaccgctttggcgtggtcttccgcggccagcc
                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="WGC:14592 IMAGE:4276489"
/clone=Lype="Brain, primitive neuroectodermal"
/clone_lib="NIH_MGC_56"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 787;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 754.8; DB 9;
Pred. No. 2.1e-112;
0; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     129 t
                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pDNR-LIB"
cgapbs-r@mail.nih.gov
Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     244 g
                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91.6%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 99.1:
Matches 759; Conservative.
                                                                                                                                                                                                                                                                                                                                                                                                                         .662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152
                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               479
                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
```

```
Steven Jones, Jennifer Asano, Ian Bosdet, Yaron Butterfield, Staanna Chan, Readman Chiu, Chris Fjell, Erin Garland, Ran Guin, Letticia Hsiao, Martin Krzywinski, Reta Kutsche, Oliver Lee, Son Sen Lee, Victor Ling, Carrie Mathewson, Candice McLeavy, Steven Ness, Pawan Pandoh, Anna-Lisa Prabhu, Parvaneh Saeedi, Jacqueline Schein, Duane Smailus, Michael Smith, Lorraine Spence, Jeff Stott, Michael Thorne, Miranada Tsai, Natasja van den Bosch, Jill Vardy, George Yang, Scott Zuyderduyn, Marco Marra.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone distribution: MGC clone distribution information can be foun through the I.M.A.G.E. Consortium/LLML at: http://image.llnl.gov Series: IRAL Plate: 6 Row: b Column: 12
This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 7688970.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryofa, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 794)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (16-JAN-2001) National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                  718
                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                 540
                                                                                                                                                                                                 658
                                                                                                                                                                                                                                     421 TTCGCAAGGTCTACGACCAGATGCCGGAGCCGCGCTACGTGGTCTCCATGGGGAGCTGCG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC001715 794 bp mRNA PRI 12-JUL-2001
Homo sapiens, Similar to CG9172 gene product, clone MGC:886
IMAGE:3503064, mRNA, complete cds.
                                                                tgcccgtggacatctacatcccaggctgcccacctacggccgaggccctgctctacggca
                                                                                                                                                                                                                                                                                                                                                                          agogoogoogoogoogooggagootgtogoogtootgtococaagootgottgtgtoo
                                                                                                                                                                                                                                                                                                                                      tectgeagetgeagagaagateaagegggageggaggetgeagatetggtaeegggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA Library Preparation: Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Genome Sequence Centre, BC Cancer Agency, Vancouver, BC, Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:9606"
/clone="MGC:886 IMAGE:3503064"
/tissue_type="Brain, neuroblastoma"
/clone_lib="NiH_MGC_19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. .794
```

m

```
AF060512.1
             DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             310
                                                                                                     REFERENCE
                                                                                                               AUTHORS
                                                                                                                                                                                                                                               CDS
                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                   /translation="MAVLSAPGLRGFRILGIRSSVGPAVQARGVHQSVATDGPSSTQP
ALPKARAVARFPSSRGEYVVAKLDDLVNWARRSSLAPHTFGLACCAVBMHNAAPRYD
MDRFGVVFRASPRQSDVMTVAGTLTNKWAPALRKVYDQMPEPRYVSMGSCANGGYY
HYSYSVWRGCDRIVPROFPABALLYGILQLQRKIKRERRLQIMYRR"

262 c 236 g 126 t
                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccaagatggcggtgctgtcagctcctggcctgcgggcttccggatccttggtctgcgct 133
                                                                                                                                                                                                                                              ccagegtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcc 193
                                                                                                                                                                                                                                                            CCAGCGTGGGCCCGGCTGTGTGTGTGTGTCCATCAGAGCGTGGCCACCGATGGC 120
                                                                                                                                                                                                                                                                                         caagcagcaccoagcetgccetgccaaaggccagaqccgtggetcccaaacccagcagce 253
                                                                                                                                                                                                                                                                                                             CAAGCAGCACCCAGCCTGCCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGGAGCC 180
                                                                                                                                                                                                                                                                                                                                                                              tgtggcccatgaccttcggcctggcctgccgccgtggagatgatgcacatggcagcac 373
                                                                                                                                                                                                                                                                                                                                                                                          ccogctacgacatggaccgctttggcgtggtcttccgcgccagcccggccagtccgacg 433
                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCCCTACGACATGGACCGCTTTGGCGTGGTCTTCCGCGCCCAGCCCGCGCCAGTCCGACG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           actaccactattectactegtggtgaggggttgegaccgeategtgeeegtggacatet 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggaagatcaagogggagoggaggotgcagatotggtaccgcaggtagcgccgccgccgcc 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geogooggageetgtogeegteetgteeceageetgettgtgteeegtgaggttgteaat 793
                                                                                                                                                                               Gaps
                                                                                                                                                                                                                 ggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              accagatgccggagccgctacgtggtctccatggggagctgccaacggaggaggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTACCACTATTCCTACTCGGTGGTGGTGGGGGCTGCGACGCGACGTGCCCGTGGACATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                         Length 794;
                                     gene product'
                                                                                                                                                                               Indels
                                                                                                                                                         Score 738.2; DB 9;
Pred. No. 9.7e-110;
0; Mismatches 8;
                                  /product="Similar to CG9172
/protein_id="AAH01715.1"
/db_xref="GI:12804589"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACCTGCCCTCGGGCTGCCGCCCAAAAAA 751
/note="Vector: porB7"
5. .647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aaacctgccctcgggcaaaaaaaaaaaaa
                         /codon_start=1
                                                                                                                                                         89.6%;
98.9%;
                                                                                                                                                                               Conservative
                                                                                                                                                                     Similarity
                                                                                                                ๙
                                                                                                               170
                                                                                                                                                         Mac.
Local Sim
743;
                                                                                                                                                         Query Match
                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                               COUNT
                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                               134
                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                         194
                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                   254
                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                              314
                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                        374
                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
               CDS
                                                                                                              BASE CO
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                             οž
                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                              δ
```

RESULT AF060512

```
10. .o.,

/codon_start=1
/product="My017 protein"
/prodein_id="AA043130_1"
/protein_id="AA043130_1"
/db.xref="G1:120019718.
/d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5;
                                                                                                                                                                                                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     130 cgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgat 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       546 aggaggetactaceactattectactoggtggtgaggggetgegacegeategtgeeegt 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 gaggccaagatggcggtgctgtcagctcctggcctgogcggcttccggatccttggtctg 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tototytyggcccatgacetteggcetggcctgctgcgccgtggagatgatgcacatggca 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361 GACGTCCATGATCGTGGCCGGCACACTCACCAAGATGGCCCCCAGCGTTCGCAAGTCT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (20 APR-1998) Institute of Genetics, School of Life
Science, Fudan University, 220 Handan Rd., Shanghai 200433,
P.R.China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             370 gcacccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgccagtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             190 ggcccaagcacccagcctgcctgccaaaggccagagccgtggctcccaaacccagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250 agcogggggggatgtggtggtcaagctggtgacccgtcaactgggcccgccggagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 AGCCGGGGCGAGTATGTGGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 TCTCTGTGGCCCATGACCTTCGGCCTGGCCTGCTGCGCCGTGGAGATGATGCACATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430 gacgtcatgatcgtggccggcacactcaccaacaagatggccccagcgttcgcaaggt.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---ctacgaccagatgccggagccgctacgtggtctccatgggggagctgcgccaacgg
                                          protein mRNA, complete cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŝ
                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; E
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dai, J.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                          Homo Sapiens
Eukaryota, Metazoa, Chordata, Craniata, Ve
Mammalia, Eutheria, Primates, Catarrhini,
1 (bases 1 to 754)
Mao, Y. M., Xie, Y., Huang, X.Y., Xing, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 704; DB 9;
Pred. No. 3.2e-104;
0; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="016003"
/tissue_type="brain"
/dev_stage="fetus"
10. .654
AF060512 754 bp mRNA
Homo sapiens clone 016d03 My017
AF060512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                    GI:12001973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 98.7%;
Matches 732; Conservative
```

2

Db 481 G	GGGAGGCTACTACCACTATTCCTACTCGGTGGTGGTGAGGGCTGCGACCGCATCGTCCCGT 540	
Qy 606 g       Db 541 G	ggacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgca 665 	/evidence=experimental BASE COUNT 145 a 243 c 230 g 134 t ORIGIN
Oy 666 9 1 Db 600 G	gctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccg 725 	Query Match 60.5%; Score 498.8; DB Best Local Similarity 84.6%; Pred. No. 3.2e-71 Matches 589; Conservative 0; Mismatches 9
Oy 726 C D 660 C	cogcogcogcoggagcotgtogcogtoctgtoccoagcotgottgtgtoccgtgagg 785 	Oy 63 gaaggccgaggccaagatggcggtgctgtcagctcctggcc 
Oy 786 t Db 720 T	786 ttgtcaataacctgccctcgg 807 	QY 123 tggtctgcgctccagcgggggcccggctgtgcaggcacgaggl 
RESULT 4		Oy 183 caccgatggcccaagcagcacccagcctgccaaagg
_	BIPSSTSU 752 bp mRNA MAM 29-NOV-1994 B.taurus mRNA for PSST subunit of the NADH: ubiquinone oxidoreductase complex.	243
	X65020.1 GI:11256 NADH-ubiquinone oxidoreductase subunit. COW.	291
ORGANISM	Bos taurus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;	Db 238 CAACTGGGGGGGCGGGGGCTGGTGTGGGCCCATGACCTTTG Qy 351 ggagatgatgcacatggcagcacccggctacgacatggacc
REFERENCE		
AUTHORS TITLE	Arizmendi,J.M., Runswick,M.J., Skehel,J.M. and Walker,J.E. NADH: ubiquinone oxidoreductase from bovine heart mitochondria. A fourth nuclear encoded subunit with a homologue encoded in	All cgccagcccagcccagtccgacgtcatgatcgtggccggca
JOURNAL	Chiologias genomes FEBS Lett. 301 (3), 237-242 (1992)	471
REFERENCE AUTHORS	2 (bases 1 to 752) Walker, J. E.	
TITLE JOURNAL	Direct Submission Submitted (11-MAR-1992) J.E. Walker, M.R.C.Lab of Molecular Biology, Hils Road, Cambridge CB2 20H, UK	
FEATURES Source		478
	m e	Oy 591 ocgaelogiquecocaqueactecaquecocaque cocaque propini
9090	/dev_stage="adult" //issue_type="heart" 17 667	Qy 651 ctacggcatcctgcagctgcagaggaagatcaagcgggagc
CDS	/gene="c1-PSST" 17667	Db 598 GTATGCATTCTGCAGCTGCAGAAGAAGATCAAACGGGAAA
	/partial /gene="cI-PSST" /EC_number="1.6.99.3"	Qy 711 ccgcagqtagcgccgccgccgccgccggcggagcct 746
	/codon_start=1 /evidence=experimental /product="PSST subunit of the NADH: ubiquinone	RESULT
	oxidoreductase complex" /protein_id="Cap46154.1" /db vref="ar.soa601"	
	/db_xref="SWISS-PROT:P42026" /translation="MAALAALRLHPILAVRSGVGAALQVRGVHSSMAADSPSSTQPA	GI:13921937
		KEYWORDS SOURCE human ORGANISM Homo sapiens
mat_peptide		Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; SNCE 1 (bases 1 to 789)
polyA_	oxidoreductase complex" polyA_signal 714719	AUTHORS Xu,J., Skelky,Y.A., Reed,S.G. and Cheev TITLE Compositions and methods for therapy an

```
a; Vertebrata; Euteleostomi;
                                     aggtgtccatcagagcgtggc 182
||| || || || || || || || AGGGTCCATTCTAGCATGGC 117
                                                                                                                                                                              cacactcaccaacaagatggc 470
                                                                                                                                                           cggcctgcctgctgccgt 350
                                                                                                                                                                                                  ever, M.A. and diagnosis of prostate
          Gaps
                                                                                                                                                                                                                                                                           30-APR-2001
NB 4; Length 752;
71;
92; Indels 15;
                                                                                                                                                                                                                                                                            PAT
```

prostate

S

```
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleos
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 789)
Xu.J., Dillon,D.C., Mitcham,J.L., Harlocker,S.L., Jiang,Y.,
Sked,S.G., Kalos,M.D., Retter,M.W., Stolk,J.A., Day,C.H.,
Compositions and methods for the therapy and diagnosis of py
                                                                                                            cancer
Patent: WO 0134802-A 32 17-MAY-2001;
                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
240 c 159 g 199
                                                                                                                                    CORIXA CORPORATION (US)
Location/Qualifiers
1. .789
                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 75.9%;
Matches 527; Conservative
                                                                                                                                                                                                     ø
                                                                                                                                                                                                   129
  human
                                                                                                                                                                source
                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        431
                                                                                                                                                                                                                                                                                                                                                                                                                                                      318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        491
                                                REFERENCE
                                                             AUTHORS
                                                                                                                          JOURNAL
                                                                                                                                                   FEATURES
                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                      7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgcc 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccgccgccggagcctgtcgccgtccccagcctgcttgtgtcccgtgaggttgtc 790
                                                                                                                                                                                                                                                                                                                                                                                        500
                                                                                                                                                                                                                                                                                                                                                                                                                430
                                                                                                                                                                                                                                                                                                                                                                                                                                          440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     202 AGAGGAANATCAAGCGGGAGCGGAGGCTGCANATTTGGTACCGCAGGTAGGGCCGCCGCC 143
                                                                                                                                                                                                                                                                                                                317
                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                GGGCCNCAAGAACTITTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANTNGCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATTTGGGGGGCGAAGGGGGGATGACTTGTTGAAACTGGGNCCCCCGGAGNTTTTTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acgtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acgaccagatgccggagccgctacgtggtctccatggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTAANACCACTATTCCTAATNGGTGGTGAGGGGNTGCGACCGCATTGTGCCCCGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tetacateceaggetgeceacetacggecgaggeettgetgetetacggeateetgeagetge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142 GCGCCGCGGAGCCTGTTGCCGTCCTGTCCCCAGCCTGNTGTGTGTCCCGNGAGGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                               GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCGAAGGG
                                                                                                                                                                                                                                                                             gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg
                                                                                                                                                                                                                                                                                                                                                                g----cocatgacottoggootggcotgctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                  coccyctacgacatggaccgctttggcgtgg--tcttccgcgccagcccagtccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gotactaccactattcctactcggtggtggggggtgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                               gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                                                              201 cacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                                                                                                      13;
                                                                                                                                                            Length 789;
                                                                                                             others
                                                                                                                                                           Score 384.6; DB 6; Length
Pred. No. 7.5e-53;
0; Mismatches 154; Indels
                                                                                                            99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT
                                                                                                             Ļ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      791 aataaacctgccctcgggcaaaaaaaaaaaaa 824
          : WO 0125272-A 32 12-APR-2001;
CORPORATION (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
WO0134802.
                                                                                                             195
                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
1. 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŗ,
                                                                                                 g o
                                  Location/Qualifiers
1. .789
                                                                                             /note="n = A,T,C
240 c 159
                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX140542 789 bp
Sequence 32 from Patent
AX140542
AX140542.1 GI:14280660
                                                                                                                                                            Query Match
Best Local Similarity 75.9%;
Matches 527; Conservative
                                                                                                             Ø
         Patent:
CORIXA C
                                                                                                            129
                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AX140542/c
LOCUS
                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                  source
                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                       559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    611
                                                                                                                                                                                                              141
                                                                                                                                                                                                                                      739
                                                                                                                                                                                                                                                                                      619
                                                                                                                                                                                                                                                                                                               261
                                                                                                                                                                                                                                                                                                                                                                318
                                                                                                                                                                                                                                                                                                                                                                                                                373
                                                                                                                                                                                                                                                                                                                                                                                                                                         499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    551
                                    FEATURES
```

g

q ò

ö

g

q

ò

g

δ

δ

g

d

οy

ద

ρy

g

ŏ

g ŏ a

δ

g

ò

```
7;
                                                                                                                                                                                                                                                                                                                                                                                                                                        550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              143
                                                                                                                                                                                                                                                       620
                                                                                                                                                                                                                                                                                                               g----cecatgaeetteggeetggeetgetgegeegtggagatgatgeaeatggeage-a 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgcc 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geogeogooggageetgtegeegteetgteeceageetgettgtgteeegtgaggttgte 790
                                                                                                                                              141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acgaccagatgccggagccgctacgtggtctccatgggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGACCAGATGCCGGGAGAACAGGGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               getactaccactattectacteggtggtgaggggetgegacegeategtgeeegtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     totacatcocaggetgeccacctacggecgaggecetgetetacggeateetgeagetge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202 AGAGGAANATCAAGCGGGAGCGGAGGCTGCANATTTGGTACCCCAGGTAGGCCCGCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gtatgtggtggccaagctggatgacctcgt---caactgggcccgccgccggafttctctgtg
                                                                                                                                                                                                                                                                                                                                                                                                   GGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANATNGCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acgtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtct
                                                                                                                                                                               739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCGAAGGG
                                                                                                                                                                                                                    201 cacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                         13;
66 others
                                                                    Score 384.6; DB 6; Length
Pred. No. 7.5e-53;
0; Mismatches 154; Indels
 ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aataaacctgccctcgggcaaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
```

```
AC007856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                       AC019889 83607 bp DNA HTG 03-JAN-2000
Drosophila melanogaster, *** SEQUENCING IN PROGRESS ***, in ordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14303 TACGATTACCGTIGCCAAAATCCGCCAAAGTGGGGCTACTCGGCCTTCGGACGCAACCAG 14244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14363 CTGCCTGGCAGTGGAGTGCTGCAATCCCAGTGGCTTCGTGGCCAGAAGACCATGCCGGTG 14304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14243 AAGACCTGGGGCGAGTGGACCTGTGCCAGGTTGGATGACCTGCTAAACTGGGGACGCAAG 14184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14003 ATCTACGACCAGATGCCCGAGCCGAGATGGGTCATTTCCATGGGCAGTTGCGCAATGGT 13944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187 gatggcccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaaccc 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agitototgiggcocaigacottoggcotggcotgcgccgtggagatgatgcacatg 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtctacgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacgga 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127 ctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccacc 186
                                                                                                                                                                                                                                                                                                                                         the submitter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                         Insecta;
                                                                                                                                                                                                                                                                                                                                 This sequence was identified as CDM:10211288 by the submitter For more information on this record e-mail to fly@celera.com * NOTE: This is a 'working draft' sequence.
                                                                                                                                                                               Eukaryota: Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta Pterygota: Neoptera: Endopterygota; Diptera: Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

( (bases 1 to 83607)
Adams, M. and Venter, J.C.
Blirect Submission
Submitted (30-020-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            247 agcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              geageaccccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcgccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     427 tecgaegteatgategtggeeggeacaeteaceaacaagatggeeceagegettegeaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ggaggotactaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      667 ctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcg 722
                                                                                                                                                                                                                                                                                                                                                                                  This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

1. 83607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 83607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
23093 a 18268 c 19032 g 23214 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 308; DB 2;
Pred. No. 2.6e-41;
0; Mismatches 180;
                                                                                                                                                 fruit fly.
Drosophila melanogaster
                                                                                          AC019889
AC019889.1 GI:6665008
HTG; HTGS_PHASE2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37.4%;
69.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 416; Conserv
                                                                              pieces
RESULT 7
AC019889/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                            AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13883
                                                                                          ACCESSION
                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
Direct Submission
Submission
Submission
Submission
Submission
Submission
Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Feb 17, 2001 this sequence version replaced gi:6633905.
Sequence submitted by:
Sequence Submitted by:
Berkeley Drosophila Genome Project
Lawrence Berkeley Mational Laboratory, MS 64-121
Berkeley, CA 94720
This sequence was assembled using end sequences from a whole genome shortgun and from subclones of this BAC and its neighboring clones.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (Chaises I to 17512)

Secondary D. Kronmiller, B., Tyler, D., Wan, K.H., Holt, R.A., Evans, C.B., Gocayne, J.D., Amanatides, P.G., Brandon, R.C., Rogers, Y. An, H., Baldwin, D., Banzcon, J., Beson, K.Y., Busam, D.A., Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.M., Dodson, K., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Ferriera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Ibeywam, C., Jalali, M., Kruse, D., Li, P., Mattel, B., Moshrefi, A., McIncosh, T.C., Moy, M., Murphy, B., Nelson, C., Nelson, R.A., Nunco, J., Paceleto, J., Paragas, V., Park, S., Patel, S., Pfeiffer, B., Scheeler, F., Stapleton, M., Strong, R., Suirskas, R., Tector, C., Williams, S.M., Zaveři, J.S., Smith, H.O., Rubin, G.M. and Veneer, J.G. Sequencing of Drosophila chromosome 3R, region 99B-99B Unpublished

London R. Erfan, D.E., Galle, R., Gersiolka, L., Baxter, E., Bazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Clesiolka, L., Gassell, Lewis, S., Li, P., Lomotan, M.A., Harmas, M., Harmas, M., Harmas, M., Harmas, M., Harmas, M., Mazda, P., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Kim, R., Poon, L., Sequeira, A., Sethi, H., Snir, E., and Rubin G. M., Rarkas, R.R., Wan, R.H., Weinhurg, T., Zhang, R., Zieran, L.L. and Rubin G. M.
                                                                                                                                                                                              AC007856 175124 bp DNA INV 17-FEB-2001
Drosophila melanogaster, chromosome 3R, region 99B-99B, BAC clone
BACR05L03, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="BACR05L03 (D795)"
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
Drosophila melanogaster BAC library, partial EcoRI in
                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 175124)
Length 175124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39325 g 48784 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37.4%; Score 308;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="y; cn bw sp"
/db_xref="taxon:7227"
/chromosome="3R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                 GI:12957650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /map="99B-99B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47809 a 39206 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pBACe3.
                                                                                                                                                                                                                                                                                                 AC007856
AC007856.7
HTG.
                                                                                                                                                                                                                                                                                                                                                                                                    fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
```

QQ

ò dd δ 9 õ g  $\delta \Delta$ 

δλ

Q

g

 $\delta$ 

g

QΫ́

ò

qq

qq

δy

ò

us-09-525-867-9_1.rge

```
Dunn, P., Durbin, K.J., Evangelista, C.C., Ferraz, C., Ferriera, S., Fleischmann, M., Fosler, C., Gabrielian, A.E., Garg, N.S., Gelbart, M.M., Glasser, K., Glodek, A., Gong, F., Gorrell, J.H., Gu, Z., Guan, P., Harris, M.L., Harvey, D., Heiman, T.J., Hernandez, J.R., Houck, J., Hastin, D., Houshon, K.A., Howland, T.J., Kenlson, J.A., Ketchum, K.A., Minmel, B.E., Kodira, C.D., Kravitz, S., Kulp, D., Lai, Y., Lasko, P., Lai, Y., Lavitsky, A.A., Lijo, X., Lilo, X., Mattei, B., McIntcsh, T.C., McIeod, M.P., Moshrefi, A., Mount, S.M., Moy, M., Murphy, B., Murphy, B., Moshrefi, A., Mount, S.M., Moy, M., Murphy, B., Murphy, D.M., Nelson, D.L., Nelson, D.R., Nelson, K.A., Nixon, K., Roulson, W., Pratazolo, M. Pittman, G.S., Pan, S., Pollard, J., Puri, Y. Rease, M.G., Stanger, B.C., Sheeler, F., Shen, H., Shue, B.C., Shden-Kiamos, I., Saunders, R.D., Scheeler, F., Shen, H., Shue, B.C., Shden-Kiamos, I., Stapleton, M., Strong, R., Wun, E., Wang, Z.Y., Wassarman, D.A., Wallow, Y. Mu, D., Yang, S., Zhu, X., Smith, H.O., Glbbs, R.A., Myers, E.W., Rubin, G. M. and Venter, J.C.
The genome sequence of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MISFLKLARNPGQLLLPGSGVLQSQWLRGQKTWPVYDYRCQNPP
KWGYSAFGRNQKTWGEWTCARLDDLLNWGRKGSLWPLTFGLACCAVEWMHIAAPRYDM
DRYGVVFRASPRQADVLIVAGTLTNKMAPAFRKIYDQMPEPRWVISMGSCANGGGYYH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Nucleotide sequence of the Celera sequence differs from the published sequence for this transcript."
/product="CT2801"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 224100)
ams,M.D., Celniker,S.E., Gibbs,R.A., Rubin,G.M. and Venter,C.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YSYSVVRGODRIVPVDIYVPGCPPTAEALMYGILQLQKKVKRMRTLQMWYRK"
join(46705. .48163,54471. .55572)
/gene="msh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adams, M.D., Celniker, S.E., Garana, M.D., Celniker, S.E., Garana, M.D., Celnission

Submitted (21-MAR-2000) Celera Genomics, 45 West Gude Drive,

Rockville, MD, USA

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .224100
/organism="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /map="9984 9985"
/db_xref="fLYBASE:FBan0001897"
/db_xref="fLYBASE:FBgn0002849"
join(47104 48163,54471 54808)
/gene="msh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="FLYBASE:PBan0002014"
/db_xref="FLYBASE:PBan00039669"
/protein_id="AAF56901.1"
/db_xref="G1:7301791"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="FLYBASE:FBan0001897"
/db_xref="FLYBASE:FBgn0002849"
<46705. .>55572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="CT6471"
/db_xref="FLYBASE:FBan0002014"
/db_xref="FLYBASE:FBgn0039669"
/dl_3. >6751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /map="99B3-99B4"
/db_xref="FLYBASE:FBan0002014"
/db_xref="FLYBASE:FBgn0039669"
6113. .6751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="CG2014 gene product"/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /chromosome="3R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="CG2014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="CG2014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="CG2014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="CG1897"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20196006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pteryota; Neoptera; Endopterygota; Diptera; Brachycera; Pteryota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophila.

1 (bases 1 to 224100)

S Adams,M.D., Celniker,S.E., Holt,R.A., Evans,C.A., Gocayne,J.D., Amanatides,P.G., Scherer,S.E., Li,P.W., Hoskins,R.A., Galle,R.F., Sutton,G.G., Wortman,J.R., Yandell,M.D., Zhang,O., Chen,L.X., Bradcon,R.C., Rogers,Y.H., Blazej,R.G., Champe,M., Pfeiffer,B.D., Wan,K.H., Doyle,C., Baxter,E.G., Hell,G., Nelson,C.R., Gabor, Malcos,G.L., Abril,J.F., Apdayani,A., An,H.J., Messon,C.R., Gabor, Millos,G.L., Abril,J.F., Apdayani,A., An,H.J., Besson,K.Y., Barman,B.P., Bardey,E.M., Ballew,R.M., Bolck,J., Bardey,E.M., Ballew,R.M., Bouck,J., Brokstein,P., Bottier,P., Burtis,R.C., Busam,D.A., Buller,H., Cadleu,E., Center,A., Chandra,I., Cherry,J.M., Cawley,S., Dahke,C., Davenport,L.B., Davies,P., Gepablos,B., Delcher,A., Deng,Z., Mays,A.D., Dew,J., Dietz,S.M., Dodson,K., Doup,L.E., Downes,M., Dugan-Rocha,S., Dunkov,B.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster genomic scaffold 142000013386035 section 95 of 105, complete sequence.
AE003770 AE002708
                                                   ö
                                                                                                                                                                                                                                                                                                                                        22333 GCGGCTCCTCGCTACGACATGGATCGCTACGGTGTGGTGTTCCGAGCATCTCCTCGCCAG 22392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22393 GCGGACGTGCTCGTGGCCGGAACCCTGACCAACAAGATGGCACCGGCCTTTCGGAAG 22452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22572
                                                                                                                                                            22093 CIGCCIGGCAGIGGAGIGCIGCAAICCCAGIGGCIICGIGGCCAGAAGACCAIGCCGGIG 22152
                                                                                                                                                                                                                                                                                  22153 TACGATTACCGTTGCCAAAATCCGCCAAAGTGGGGCTACTCGGCCTTCGGACGCAACCAG 22212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          909
                                                                                                                                                                                                                            187 gatggcccaagcacccagcctgccctgccaaaggccagagccgtggctcccaaaccc 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                      127 etgegetecagegtgggeceggetgtgeaggeacgaggtgtecateagagegtggeeaee 186
                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22453 ATCTACGACCAGATGCCCGAGCCGAGTCATTTCCATGGGCAGTTGCGCCAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gcagcacccgctacgacatggaccgcttggcgtggtcttccgcgccagcccggccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        427 tecgaegteatgategtggeeggeacaeteaceaacaagatggeeceagegettegeaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 547 ggaggetactaceactattectactegtggtggtgagggetgegaeegeategtgeeegtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22513 GGGGGCTACTACCACTACTCCTACTCGGGGTTCGCGGCTGCGATCGCATTCGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22573 GACATCIACGTGCCCGGATGTCCGCCCCACCGCCGAGCCTTAATGTACGGAATCCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     307 agttototgtggcocatgaccttcggcctggcctgctgcgccgtggagatgatgcacatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 487 gtctacgaccagatgccggagccgcgtacgtggtctccatggggagctgcgccaacgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gacatotacatoccaggotgcccacctacggccgaggccctgctctacggcatcctgcag
                                                   Indels
                   Pred. No. 1.9e-41;
0; Mismatches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE003770.1 GI:7301790
            69.88;
                   Best Local Similarity 69.8
Matches 416; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT SAE003770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
```

```
join(83669. 84481,84545. 84662,87559. 87664,87737. 87791,88482. 88496)
/gene="CG1906"
/note="CG1906"
/note="CG1906"
/cdon_start=1
/db_xref="ELFBASE: EBan0001906"
/db_xref="ELFBASE: EBan0001906"
/db_xref="ELFBASE: EBan0039672"
/protein_id="AAF56905.1"
/db_xref="G1:7301795"
/db_xref="G1:
            84481,84545. .84662,87559. .87664,87737. .87791,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ILPEEKERIYNAGGSVMIKRVNGTLAVSRALGDYDFKNVKEKGGCEQLVSPEPEIFCQ
SRQDSDEFLVLACDGIWDVMSNEDVCSFIHSRMRVTSNLVSIANQVVDTCLHKGSRDN
MSIIIIAFPGAPKPTEEAIEAEHRLEKQIEKITRDEIESSKITDYVDLLKCLQNRDDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccacc 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187 gatggcccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACATCTACGTGCCCGGATGTCCGCCCACCGCCGAGGCCTTAATGTACGGAATCCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CIGCAGAAGAAGGIAAAGCGCATGAGGACCCTGCAGATGTGGTACAGGAAGTAGAG 6753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6158 CTGCCTGGCAGTGGAGTGCTGCAATCCCAGTGGCTTCGTGGCCAGAAGACCATGCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6218 TACGATTACCGTTGCCAAAATCCGCCAAAGTGGGGCTACTCGGCCTTCGGACGCAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       247 agcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     goagcaccccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcgccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGCTCCTCCCTACGACATGGATCCTACGTGTGGTGTTCCGAGCATCTCCTCGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         427 tecgaegteatgategtggeeggeacaeteaceaacaagatggeeceagegettegeaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ggaggetactaccactattectacteggtggtgagggggtgegaeegeategtgeeegtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gacatctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctgcagaggaagatcaagcgggagcggagctgcagatctggtaccgcaggtagcg 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGLPPGGGLQSKYHVIERTFKQEFPDRPCESFTH"
complement(join(89615. .90119,90172. .>91012))
/gene="CG7568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 224100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 37.4%; Score 308; DB 3; Length 224:
Best Local Similarity 69.8%; Pred. No. 1.7e-41;
Matches 416; Conservative 0; Mismatches 180; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="CT8427"
/product="FLYBASE:FBan0007568"
/db_xref="FLYBASE:FBan00039673"
/db_dref="FLYBASE:FBan0039673"
/evidence=not_experimental
/evidence=not_experimental
/gene="CG7568"
/map="9985-9987"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="FLYBASE:FBan0007568"
/db_xref="FLYBASE:FBgn0039673"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    667
            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΩŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                            /GD_xref="FIXEASE:FBan0001897"
/GD_xref="FIXEASE:FBan0001897"
/GD_xref="FIXEASE:FBan0002849"
/AD_xref="GI:7301792"
/GD_xref="GI:7301792"
/GD_xref="GI:7301792"
/Lranslation="MSSGNMTSSNLTNLSPSHPAGINALASPTSPSALLLAHQQHLLQ
/QDQQQQQQQQQAAALQLAAVUPPAHLHUTTTSRASSLADFTRFPPNQA
ADGPQQQQQQQQQAAALQLAAVUPPAHLHTGTAANAHHAHLQAAAAA
AAHQQQAMAAQLRQQQQQADARANSPPASTSSTPSSTPGSALGSQGNVASTPANAA
AAHQQQAMAAQLRQQQQADARANSPPASTSSTPSSTPLGSALGSQGNVASTPANAA
AAHQQQAMAAQLRQQQQADARANSPPASTSSTPSSTPLGSALGSQGNVASTPANAA
AAHQQAQAMAAQLRQQQQADARANSPPARYPYPTPSSALAAAAVAWTGMGGGVPWPGT
RQMPPFGPPGMPPGAPFGGDANEPPRIKCHIRKHRDNRRPPFTQQLLSLSKKFRE
KQYLSIABRABESSSRLTETQVKIWFQNRRAKARRQGABIEKIKMAALGRGAPGAQ
GOMPLEMENT (join (77651. .77884,77983. .>78412))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Join(82216. .82539,83590. .84481,84545. .84662,87559. .87664,87737. .87791,88482. .88621,94828. .94899)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="FLXBASE:FBan0007567"
/db_xref="FLXBASE:FBan00039670"
/db_xref="FLXBASE:FBqn0039670"
/db_xref="d1"-301793"
/translation="MFSKFSLLAVVLAFGLVSGLSLSLVVKPSKLKLPTNKKILGLQO
YPEBLAARPOGTSVRCPTY.TRIINGLSAQYELDYNKCVKPTARBLYLAAWNSTLF
GIQASGDRGONTFFOCSSIVDFVLAFECFANVGAEGSKIMYQVSANATEAAVQIKIHL
QTLDSQLESCLNYSEKDFVEGTSLYYGELNKCLAGAPVPQDFTANNYTTA"
//dbca.mcg14703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MPAKQAKILVFCLSLGLSLAVKLOIPFFFDAHIOELQLGSRELA
EVHSDHSTQCFSITKEFKLAKLADCFETNFTACISAYDNCTSHISEKTAEDROILLRSA
NIGGSYPANCOVWTLEQOPLDTVVSRLECASTNSAESSKIFYAISANATQIAVQIQE
OYTILESRESYCINDANRSYVEDTSDTYELLNNCLKNGPTTTTCNPLTYPTTTATTT
TTTITTAAPLLR"
        note="msh gene product; Nucleotide sequence of the Celera
equence differs from the published sequence for this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /yenue="c.vo.v"
/product="c.vo.v"
/product="c.vo.v"
/db_xref="rivBaSE:FBan0007567"
/db_xref="rivBaSE:FBan00039670"
complement(<77651. >78412)
/gene="CG7567"
/map="99B5-99B6"
/db_xref="rivBaSE:FBan0007567"
/db_xref="rivBaSE:FBan00039670"
/db_xref="rivBaSE:FBaSE:FBan00039670"
/db_xref="rivBaSE:FBaSE:FBan00039670"
/db_xref="rivBaSE:FBaSE:FBaN00039670"
/db_xref="rivBaSE:FBaSE:FBaN00039670"
/db_xref="rivBaSE:FBaSE:FBaN00039670"
/db_xref="rivBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:FBaSE:F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="CG11470"
/pote="CG11470 gene product"
/codon_start=1
/db_xref="FirNBASE:FBan0011470"
/db_xref="FirNBASE:FBgn0039671"
/protein_id="RAN55694"
/db_xref="GI:7301794"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="CG11470"
/map="99B5-99B6"
/db_xref="FLYBASE:FBan0011470"
/db_xref="FLYBASE:FBqn0039671"
complement(79388 80080)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="FLYBASE:FBan0001906"
/db_xref="FLYBASE:FBgn0039672"
<82216. >94899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="FLYBASE:FBan0011470"
/db_xref="FLYBASE:FBgn0039671"
complement(<79354. .>80123)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="FLYBASE:FBan0001906"
/db_xref="FLYBASE:FBgn0039672"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="CG11470"
/product="CT36281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'product="CT2831"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /map="99B5-99B7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
```

```
Db 231214 CTGCCTGGCAGTGGAGTGCTGCAATCCCAGTGGCTTCGTGGCCAAAGACCATGCCGGTG 231273
                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ.
                                                                                                                                                                                     δ
                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                           Eukaryota; Merazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Meptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

E 1 (bases 1 to 31043)
S Celniker, S.E., Adpayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K.
Kaarney, L., Kim, E., Lee, B., Lewis, S., Li, P., Ling, H.,
Rosinefi, A.R., Moshrefi, M., Nixon, K., Pacieb, J.M., Park, S.,
Stiffer, B., Poon, L., Richards, S., Sequeira, A., Sethi, H.,
Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M.,
Sequencing of Drosophila chromosome 3R, region 9947-9985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (04-SEP-1999) Berkeley Drosophila Genome Project, MS 4-121, Lawrence Berkeley National Laboratory, One Cyclotron Road, Berkeley, CA 94720, US On Sep 4, 1999 this sequence version replaced gi:5713324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Outpublished

Celliker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenoff, C., Champe, M., Chavez, C., Chew, M., Cieslolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kanney, L., Kim, E., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfelffer, B., Poon, L., Richards, S., Sequeira, A., Sehi, H., Sylrskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="BACR48K01 (D488) and BACR48023 (D498) were sequenced as a project. BACR48K01 extends from bp 1 183,934. BACR48023 extends from bp 142,325 to bp 311,043."
                                               Drosophila melanogaster, chromosome 3R, region 99A7-99B5, BAC clones BACR48K01 and BACR48C03, complete sequence.

AC009888 AC0606983 AC007081
AC009888.1 GI:5822961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="BACS BACR48K01 (D488) and BACR48023 (D498)"
Clone=11b="RPCI-98 (Roswell Park Cancer Institute
Drosophina melanogaster BAC library, partial EcoRI j
pBACe3 6)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence submitted by:
Berkeley Drosophila Genome Project
Lawrence Berkeley National Laboratory, MS 64-121
Berkeley, CA 94720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/strain="y; cn bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           86791 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68661 c 68467 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /chromosome="3R
                                                                                                                                                                                                                                             Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              On Sep 4, 1
gi:5670685.
                                                                                                                                                                                                                 fruit fly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                       LOCUS
                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                      ACCESSION
        RESULT 1
AC009888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
```

```
Direct Submission Submission Submitted (08-MAY-1992) Takao Yagi, The Scripps Research Institute Submitted (08-MAY-1992) Takao Yagi, The Scripps Research Institute Division of Biochemistry, SBR-15, La Jolla, CA 92037 USA On Oct 22, 1993 this sequence version replaced gi:L50618.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M93015.1 GI:409250
DNA repair protein; NADH dehydrogenase; NQO4 gene; NQO5 gene; NQO6 gene; NQO7 gene; excision nuclease; ndhK gene; uvrA gene.
Paracoccus denitrificans DNA.
Paracoccus denitrificans DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Xu,X., Matsuno-Yagi,A. and Yagi,T.
Gene cluster of the energy-transducing NADH-quinone oxidoreductas
of Paracoccus denitrificans: Characterization of four structural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231334 AAGACCTGGGGGGAGTGGACCTGTGCCAGGTTGGATGACCTGCTAAACTGGGGACGCAAG 231393
                                                                                                                                                                                                                                                                 Db 231394 GGATCCCTCTGGCCGCTGACCTTTGGTCTCGCCTGCTGCGCCGTCGAAATGATGCACATT 231453
                                                                                                                                                                                                                                                                                                                                                               231454 GCGCTCCTCGCTACGACATGGATCGCTACGGTGTGCTGTTCCGAGCATCTCCTCGCCAG 231513
                                                                                                                                                                                                                                                                                                                                                                                                                                                          231514 GCGGACGTGCTCATCGTGGCCGGAACCCTGACCAAGATGGCACGGCCTTTCGGAAG 231573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 231634 GGCGGCTACTACCACTACTCCTACTCGGGGTTCGCGGCTGCGATCGCATTGTTCCGGTG 231693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              231753
                                                   Db 231274 TACGATTACCGTTGCCAAAATCCGCCAAAGTGGGGCTACTCGGCCTTCGGACGCAACCAG 231333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDENQOUVR 3739 bp DNA BCT 25-OCT-1993 Paracoccus denitrificans DNA repair protein (uvrA) gene, 3' end, and NADH dehydrogenase (NQO4, NQO5, NQO5, NQO7) genes, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; alpha subdivision; Rhodobacter group;
                                                                                                                                                                                                             307 agttetetgtggeecatgacetteggeetggeetgegeegtggagatgatgeatg 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        487 gictacgaccagaigceggageegetacgiggieteceaiggggageigegeeaegga 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggaggetactaceactattectacteggtggtgaggggetgegaeegeategtgeeegtg 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gacatetacateceaggetgeecacetaeggeegaggeetgetetaeggeateetgeag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db 231694 GACATCTACGTGCCCGGATGTCCGCCCACCGCCGAGGCCTTAATGTACGGAATCCTGCAG
gatggcccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaaccc
                                                                                                         247 agcagccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgg
                                                                                                                                                                                                                                                                                                                       gcagcaccccgctacgacatggaccgctttggcqtggtcttccgcgccagcccgggccag
                                                                                                                                                                                                                                                                                                                                                                                                                                 427 tecgacgteatgategtggeeggeacacteaceaacaagatggeeceagegettegeaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Paracoccus denitrificans"
/db_xref="taxon:266"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene products
Biochemistry 31, 6925-6932 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="uvrA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sactory Paracoccus.
Paracoccus.
To 3739)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 3739)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yagi and T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92345253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M93015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PDENQOUVR
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               799 . ¥0
  187
                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
```

6

127 ctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccacc 186

37.4%; Score 30%; DB 3; Length 311043; 69.8%; Pred. No. 1.5e-41; Live 0; Mismatches 180; Indels 0;

Best_Local Similarity 69.8 Matches 416; Conservative

ŏ

ö

```
ERLIGIVIPRRASLIRVLYSETGRILNILMGVITGAMOYGALTPPLWGFBAREEMNIF
FRAACARLHAAYFREGGVHOLPPDLDDIEBWCBRPRLYDDLDLILTENRIFRQR
LVDIGITYTEADALDWGYTGYWONGSGLAMDIERSOPYECYDEEDFOYLPVGRNGDCYDR
YLCRWAEMRESCKIMQQAVQKLRAEPAGDVLARGKLTPPRRAEMRRDMSSLIHHFKLY
TEGRKYPAGPECYYAAVEGPRGEVYLVADGTINKPWRAKLRAPGFAHLQSIDWMSRGHM
LADVPALIATLILDLESEVDR" 675 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA HTG 16-NOV-1999
*** SEQUENCING IN PROGRESS ***, in ordered
/translation="MDGDIRKNSLDDGSMDALTGEQSIRNFNINFGPQHPAAHGLLRM
VLELDGEIVERADPHIGLLHRGTEKLMESRTYLQNLPYLDRLDYVAPMNOEHAWCLAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to fly@celera.com.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     625
                                                                                                                                                                                                                                                                                                                                      266 tggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtgggcccatga 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  565
                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence was identified as CDM:10210747 by the submitter. For further information on this sequence e-mail to fly@celera. * NOTE: This is a "working draft' sequence. * This sequence will be replaced * by the finished sequence as soon as it is available and * the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila. 1 (bases 1 to 29563)
Adams, M. and Venter, J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (16-NOV-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cctactcggtggtgaggggttgcgaccgcatcgtgcccgtggacatctacatcccaggct
                                                                                                                                                                                                                                                                                                                                                                                 1327 TGCTGACCACGACCGAGGACATCATCAACTGGGGGGCACAACGGTTCGCTGCACTGGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                             cetteggeetggeetgetgegegtggagatgatgeacatggeageaceegetacgaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1387 CCTTCGGCCTGCCTGCTGCGGCGGTCGAGGTGATGCAGACCTCGATGCGGCCTATGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          386 tggaccgctttggcgtggtcttccgcgcccagcccgccagtccgacgtcatgatcgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  506 agccgcgctacgtggtctccatggggagctgcgacaacggaggaggctactaccactatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1627 ccrarregeregregesergesearcearcersesergesearcrargrecesser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                coggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccgg
                                                                                                                                                                                                                                                         DB 1; Length 3739;
                                                                                                                                                                                                                                                                                                101; Indels
                                                                                                                                                                                                                                                  34.0%; Score 280.4; DB 1
illarity 77.1%; Pred. No. 2.4e-36;
Conservative 0; Mismatches 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1747 GCACCGGCACGCTGGTGAGGTG 1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC014169 29563 bp Drosophila melanogaster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gggagcggaggctgcagatctg 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:6437166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC014169.1 GI:64
HTG; HTGS_PHASE2.
                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC014169
                                                                                                                                                                       634
                                                                                                                                                                                                                                                                           Best Local Sim:
Matches 341;
                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC014169
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                                                                                                             326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ōγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="NaDH" dehydrogenase"
/procein_id="AaA03035.1"
/db_xref="G1:150620"
/db_xref="G1:150620"
/translation="MBYLLOBYLDIUVFLGMASALAIVLILAAAVIAVRNPDPEKVSA
YECGPRAFDARMFROYRFYLVSILFIIFDLEVAFLFPWAVSFASLSDVAFWGLMVFL
AVLIVGFAYEWKKGALEWA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product-"NADH dehydrogenase"
/protein_id="AAA03036.1"
/protein_id="AAA03036.1"
/bcrein_id="Tay 409251"
/bcarslation="WTGLNTAGADRDLATAELNRELQDKGFLLTTTEDIINWARNGSL
HWMTFGLACCAVEMOTSWPRYDLERFGTAPFASPRQSDLMTVAGTLTNKMAPALRKY
YDQMPEPRYVISMGSCANGGGYYHYSYSVVRGCDRIVPVDIYVPGCPPTAEALLYGIL
                                                                                                                                                                                                       /translation="KLSKELSRRATGKTLYILDEPTTGLHFEDVRKLLEVLHSLVDQG
NTVVVIEHNLDVIKTADWILDIGPEGGDGGGAIVATGTPEQVAEVPESHTGRYLAPML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MSEALSDEALLELAEHIALRRENDVISTQVAFGELTVNATLSGV
GIGLERLENDDPORRESTLIDTTAVDMPARPAREDVYVHLLSKYQNQRIRVKVQVREDE
LVPSLIGVRPGANNYERVPOLFGILFSGHSDLRRILTDYGFRGHPLRKDFPTTGYVE
VRWSDIEKRVVYEPVNLVQEYRQFDFLSPWEGAKYVLEGDEAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /standard_name="ndhk subunit of Paracoccus NDH-1"
/EC_number="1.6.5.3"
/note="putative"
                                                                                                                                                                                                                                                                                                                                                      /standard_name="nd3 subunit of Paracoccus NDH-1"/EC_number="1.6.5.3"
/note="GTG start codon; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /standard_name="25k subunit of Paracoccus NDH-1"
/SC_number="1.6.5.3"
/Codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /standard_name="48k subunit of Paracoccus NDH-1"
/EC_number="1.6.5.3"
                                                    function="ATPase and DNA binding protein"
                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_except=(pos:880. .882,aa:Met)
                                                                                               /codon_start=1

transl_table=11

/product="DNA repair protein"

/protein_id="AAA03034.1"

/db_xref="G1:150619"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence-experimental
/product-"NABA dehydrogenase"
/protein_id="AABA3337.1"
/db_xref="GI:409252"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=experimental
/product="Nabh dehydrogenase"
/protein_id="AAA03038.1"
/db_xref="GI:150623"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                               /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QLQRRIRRTGTLVR"
1773. .2399
/gene="NQO5"
1773. .2399
/gene="NQO5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1245. .1769
/gene="NQO6"
1245. .1769
/gene="NQO6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=
                                                                                                                                                                                                                                                                                                                                    /gene="NQ07"
                                    'gene="uvrA"
                                                                                                                                                                                                                                                                       880. .1245
/gene="NQO7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2453. .3691
/qene="NQO4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="NQO4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .3691
                                                                                                                                                                                                                                                DAARSAAE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
```

g

ò g δy

ŏ

Dp

g

δŻ

q

δ

Dp

ΟŸ

g

ŏ

g

δŽ

g

δ

δŽ

```
Submitted (27-529-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA on Dec 13, 1999 this sequence version replaced gi:644944.

For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a "working draft' sequence It currently consists of 77 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                             Celnker.S.E., Agbayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G. Celnker.S.E., Agbayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G. Celnker.S.E., Champe,M., Chavez,C., Chew,M., Ciesloka,L., Doyle,C.M., Farfan,D.E., Galle,R., George,R.A., Harris,N.L., Hoskins,R.A., Houston,K.A., Hummasti,S.R., Karra,K., Kearney,L., Rim,E., Lee,B., Lewis,S., Li,P., Lomotan,M.A., Mazda,P., Moshrefi,A.R., Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfeiffer,B., Poon,L., Sequeira,A., Sethi,H., Snir,E., Sylieks,R.R., Wan,K.H., Weinburg,T., Zhang,R., Zieran,L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               * arbitrary. Gaps between the contigs are represented as * runs of N, but the exact sizes of the gaps are unknown. * This record will be updated with the finished sequence * as soon as it is available and the accession number will * be preserved.
  Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfeiffer,B.,
Richards,S., Sethi,H., Svirskas,R.R., Wan,K.H., Webster,D.
Woolley,P., Yang,S., Yee,M., Yu.C. and Rubin,G.M.
Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of unknown length of 1284 bp in length of 1484 bp in length of 1476 bp in length in unknown length of 1348 bp in length of 1401 bp in length of 1401 bp in length if unknown length of 1401 bp in length of 1401 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown length
g of 753 bp in length
f unknown length
g of 1302 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown length
of 820 bp in length
unknown length
of 1630 bp in length
unknown length
of 632 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown length
of 1120 bp in length
unknown length
of 2053 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
of 1674 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig of 674 bp in length
gap of unknown length
contig of 753 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 585 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 560 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown lengt
of 605 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 517 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 379 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 446 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 545 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 2494 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2802:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2882:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21404:23898:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3634:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4319:
4698:
4778:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5295:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5935:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6640:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9191:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        460
                                                                                                                                                                                                                                                                                              Direct Submission
                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1508
1588
2890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       675
755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18072
19192
19272
21325
21405
                                                                                                                                                                                                                                                                        Rubin, G.M.
                                                          TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RPCI-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC010919 140685 bp DNA HTG 13-DEC-1999
DNA DNA HTG 13-DEC-1999
SNS-23 map 144-144 strain y; cn bw sp, *** SEQUENCING IN PROGRESS
***, 77 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ptergota, Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha, Ephydroidea, Drosophilidae, Drosophila.

(bases 1 to 140685)

Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Parfan, D.E., Galle, K., George, R.A., Harris, N. L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19577 CGAAGTGGCCCAAAATCTGCCCAAGAAGGGCTACTCTCCGTTCGGCACCAACAACAGTCCTC 19736
                                                                                                                                                                                                                                                                                                                                                                                                                            19737 CGTTGCGGAGTGGTCACTGGCCAGACTGGACGATCTGCTCAACTGGGGTCGCAAGGGCTC 19796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19797 GATCTGGCCACTGACTTTCGGTTTTGGCCTGCTGTGCCGTCGAAATGATGCACATCGCTGC 19856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19977 CGACCAAATGCCCGAGCCACGTTGGGTCATCTCCATGGGCAGCTGTGCCAACGGCGGCGG 20036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20097 ATACGTACCCGGTTGTCCGCCAACCGCGAGGCGCTCATGTACGGCGTTTTGCAGCTGCA 20156
                                                                                                                                                                                            1; Gaps .
                                                                                                                                                                                                                                                                                                            193 ccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagc 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      671
                                                                                                                                                                                                                                 133 tecagegitgggeceggetgtgcaggcacgaggtgtccateagagegtggccacegatgge 192
                                                                                                                                                                                                                                                                                                                                                                                       cggggc.gagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttc 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  312 totgtggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagc 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              372 accocgctacgacatggaccgctttggcgtggtcttccgcgccagcccgccagtccga 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       432 ogicatgatogiggoggoacactcaccaacaagatggccccagcgcttcgcaaggtcta 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  492 cgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggagg 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctactaccactattcctactcggtggtgaggggtgtggaccgcatcgtgcccgtggacat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      612 ctacatoccaggotgoccacctacggocgaggocctgottotacggoatoctgoagotgoa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 29563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 672 gaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgc 723
                                                                                                                                                                                            Indels
Location/Qualifiers
1. .29563
/organism="Drosophila melanogaster"
/db_xref="taxon:7227"
1 6105 c 6205 g 8597 t
                                                                                                                                                    Score 279.2; DB 2;
Pred. No. 1.6e-36;
0; Mismatches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC010919.9 GI:6563419
                                                                                                                                                      33.9%;
68.1%;
                                                                                                                                                                                            Matches 403; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG; HTGS_PHASE1
                                                                                                                                                    Query Match
Best Local Similarity
                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC010919
                                                                             8656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                        source
                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                       253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC010919
    FEATURES
```

ngth in leng ngth in leng ngth in leng in leng ngth in leng ngth in leng in leng	ырындынды борыр борырынды арабыны	ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth ogth
f unknown i g of 3101 b g of 240% b f unknown i g of 2237 b g of 2237 b unknown i g of 2543 b g of 2543 b g of 2543 b g of 12543 b g of 12543 b g of 12543 b	9 of 1963 b 1 unknown 1 1 unknown 1 9 of 6052 b 9 of 12251 1 unknown 1 9 of 12251 1 unknown 1 9 of 132 bp 1 unknown 1 9 of 144 bp 1 unknown 1 1 unknown 1	t unknown le go f 555 bp unknown le go f 637 bp go f 637 bp go f 637 bp go f 490 bp go f 603 bp go f 603 bp go f 603 bp go f 604 bp go f 440 bp go f 440 bp go f 440 bp go f 842 bp go f 440 bp go f 842 bp go f 608 bp go f 842 bp go f 8
o to	on the control of the	o g o g o g o g o g o g o g o g o g o g
20100011442000	24 4 4 4 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8	120413: 1200468: 1210685: 1221765: 1221765: 1221767: 12310287: 12310287: 12310287: 12310287: 1241712: 1241712: 1241712: 1241712: 1241712: 1261087: 1261087: 1261087: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 127183: 1
886779991944999 886779961944999 878999889946471	4 4 4 4 4 W W W W W C C C C C C C C C C	120334 1209414 1200419 1210649 1210649 1221466 122380 122380 122383 122383 122383 122414 12414 12550 126105 126105 126105 127844 127844 12784 12784 12784 12786 12880 12880 12993
* * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *

		.,								
		sde	192 103658	252 103718	311	371 103838	431 103898	<b>4</b> 91 103958	551 104018	611 104078
30560: contig of 545 bp in 30640: gap of unknown lengt 31152: contig of 512 bp in 31232: gap of unknown lengt 31806: gap of unknown lengt 61383: contig of 477 bp in 32463: gap of unknown lengt 613016: contig of 553 bp in 33016: contig of 553 bp in 33016: contig of 651 bp in 33016: contig of 651 bp in 53016: contig of	or 031 pp in leng on known length of 449 bp in leng of 688 bp in leng unknown length of 539 bp in leng unknown length of 552 bp in leng unknown length of 440 bp in leng unknown length of 453 bp in leng unknown length of 374 bp in leng unknown length of 218 bp in leng unknown length of 216 bp in leng unknown length of 210 bp in leng unknown length of 427 bp in leng unknown length of 428 bp in leng unknown length	e 279.2; DB 2; Length 140685; 1.No. 9e-37; ismatches 188; Indels 1; G	gotytycaggcacgaggtytccatcagagcytyggcaccgatygc 	octgccctgccaaaggccagagccgtggctcccaaacccagcagc 	99199ccaagctggatgacctcgtcaactgggcccgccggagttc 	cttcggcctggctgcgccgtggagatgatgcacatggcagc 	ggaccgctttggcgtggtcttccgcgccagcccgcccagtccga 	cggcacactcaccaacaagatggcccagcgcttcgcaaggtcta 	ccgcgctacgtcgtctccatggggagctgcgccaacggaggagg 	tactcggtggtggtgagggctgcgaccgcatcgtgcccgtggacat
13001 13005 130064 131108 131182 132180 133010 133010	**************************************	atch cal Similarity 403; Conserva	tecagegtgggeeegg                 TTCGGGGTGCCCGCT	ccaagcagcacccago                   GAAGTGGCCCAAAAT	cggggc-gagtatgt 	tctgtggcccatgac	accccgctacgacate	cgtcatgatcgtggcollllllllllllll	ogaccagatgooggag 	ctactaccactattcctarectarectarectarectare
		Query Ma Best Loc Matches	133 103599	193 103659	253 103719	312	372	432	492	552
		<b>ош 2</b>	QY Db	Qy	oy Db	දු පු	Qy Dp	QY Db	OY Db	QY Db

us-09-525-867-9_1.rge

δλ

```
s: gap of unknown length
4: contig of 1101 bp in length
1: gap of unknown length
1: contig of 747 hr
                                                                                                                                                                                                                                                                                                                                                          gap of unknown length contig of 957 bp in length gap of unknown length gap of unknown length contig of 1055 bp in length gap of unknown length contig of 1144 bp in length gap of unknown length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         f unknown length
q of 1239 bp in length
f unknown length
q of 1442 bp in length
f unknown length
f unknown length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f unknown length
g of 1505 bp in length
f unknown length
g of 1488 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          f unknown length
g of 854 bp in length
f unknown length
g of 1655 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length
of 1663 bp in length
unknown length
of 1668 bp in length
                                                                                                                                                                                                                                                     g of 836 bp in length
f unknown length
g of 685 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown length
of 1012 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown length
of 1296 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown length
of 2292 bp in length
                                                                                                                                                                                                            contig of 1111 bp in length
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig of 998 bp in length
gap of unknown length
contig of 489 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 580 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 999 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                    gap of unknown length
contig of 896 bp in length
                                                                                contig of 525 bp in length
gap of unknown length
                                                                                                                           length
  808 bp in length
                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                        of 667 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown length
rof 745 bp in len
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  747 bp in ler
iknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig of 978 bp in le
gap of unknown length
                                                                                                              gap or white continuing of 16 564 bp in le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of 489 bp in le
gap of unknown length
contig of 931 bp in le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                              length
                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         909 bp in
                                                                                                                                               unknown lengt
of 633 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     996 bp in
                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                      contig of
                                                                                                                                                                                                                                                                                                 contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig og og contig o
                                                                                                                                                                                                                                                                                                                   gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contiq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            43339:
43419:
45087:
                                      5866:
5946:
6471:
6551:
7115:
                                                                                                                                             7195:
7828:
7908:
9019:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9494:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14279:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6274:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8981:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13203:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41596:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37489:
                                                                                                                                                                                                                                                                         10015:
                                                                                                                                                                                                                                                                                                                                          11447:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34199:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35259:
                                                                                                                                                                                                                                                                                                                                                                                                         2564:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5655:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8233:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24955:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34200
34280
35180
35260
36556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37490
37570
39225
17223
17303
18234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23153
23898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23978
24956
255036
255036
25036
25036
25036
25063
25063
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
25062
2506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   39305
41597
41677
43340
43420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission

Submitted (02-Aug-1999) Drosophila Genome Center, Lawrence Berkeley, Bubmitted (02-Aug-1999) Drosophila Genome Center, Lawrence Berkeley, Ca 94720, USA

On Feb 15, 2000 this sequence version replaced gi:6466495.

For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to baggefruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a "working draft' sequence. It currently

* consists of 110 contigs. The true order of the pieces

* is not known and their order in this sequence record is

* arbitrary. Gaps between the contigs are represented as

* Tuns of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence

* as soon as it is available and the accession number will

* be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Perryota, Neoptera; Endopteryota, Diptera; Brachycera; Perryota, Neoptera; Endopteryota, Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

E 1 (bases 1 to 163378)

Celniker,S.E., Agbayani,A., Arcaina,T.T., Baxter,E., Blazej,R.G., Butenhoff,C., Champe,M., Chavez,C., Chew,M., Cissiolka,L., Doyle,C.M., Farfan,D.E., Galle,R., George,R.A., Harris,N.L., Hinkle,A., Hoskins,R.A., Houston,K.A., Ling,H., Moshrefi,A.R., Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfelifer,B., Richards,S., Sethi,H., Svirskas,R.R., Wan,K.H., Webster,D., Woolley,P., Yang,S., Yee,M., Yu,C. and Rubin,G.M.

Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                              AC008336 163378 bp DNA HTG 15-FEB-2000
Drosophila melanogaster chromosome X clone BACR20P20 (D890) RPCI-98
20.P.20 map 13F-14A strain y; cn bw sp, *** SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Celniker, S.E., Agbsyani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Lomotan, M.A., Mazda, P. Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and
                                        Db 104079 ATACGTACCCGGTTGTCCGCCAACCGCCGAGGCCCTCATGTACGGCGTTTTGCAGCTGCA 104138
  612 ctacatoccaggetgeceaectaeggeegaggeeetgetetaeggeateetgeagetgea 671
                                                                                                       Db 104139 GAAGAAGGTTAAAGGGGATGAAGACGCTCCAGATGTGGTATAGGAAGTAAGGC 104190
                                                                                672 gaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown length contig of 557 bp in length contig of 765 bp in length gap of unknown length gap of unknown length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g of 765 bp in length
f unknown length
g of 500 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
gap of
                                                                                                                                                                                                                                                                                             ***, 110 unordered pieces.
AC008336
AC008336,5 GI:6978360
                                                                                                                                                                                                                                                                                                                                                            HTG; HTGS_PHASE1.
fruit fly.
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 163378)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1940:
2020:
2577:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2657:
3422:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3502:
4002:
4082:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          543
623
1202
1202
1202
2021
2021
2578
3503
4003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rubin, G.M.
                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                          14
                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                        RESULT 1
AC008336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                SOURCE
```

```
7: gap of unknown length
3: contig of 1356 bp in length
9: gap of unknown length
7: contig of 1958 bp in length
7: contig of 1958 bp in length
1: contig of 1958 bp in length
1: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 10178 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   440 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
p in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             known length
655 bp in length
known length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
of 627 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown length
of 532 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown ler
of 568 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown le
of 532 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  591 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
of 591 bl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
contig
gap of
contig
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig
gap of
contig
gap of
contig
                                                                                                                                      48639:
                                                                                                 446604
488560
550550
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
550590
55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88432
92029
92109
96971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97051
102052
102152
108187
113641
113721
120524
126528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 137306
137386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138625
```

Query Match 33.9%; Score 279.2; DB 2; Length 163378; Best Local Similarity 68.1%; Pred. No. 8.5e-37; Matches 403; Conservative 0; Mismatches 188; Indels 1; Gaps 1;

oy D

58790 GATCTGGCCACTGACTTTCGGTTTGGCCTGCTGTGCCGTCGAAATGATGACACATCGCTGC 58849 59029 491 312 tctgtggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagc cggggc-gagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttc acccegetacgacatggaccgetttggcgtggtettccgcgcccagccggccagtccga cgtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtcta gaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgc 723 59150 253 672 193 q .qa g δŏ δλ q δ qq ò ò δŏ

RESULT 15
AE003500/c
LOCUS
LOCUS
DEFINITION Drosophila melanogaster genomic scaffold 142000013386053 section 17
Of 30, complete sequence.
ACCESSION AE003500 AE002593
ACCESSION AE03500.2 GI:10728273
KEYWORDS
FRUIT fly.
ONGANISM Drosophila melanogaster
ORGANISM Eukaryota, Metazoa, Arthropoda, Tracheata; Hexapoda, Insecta;

FULL fly.

Drosophila melanogaster

Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Petryota; Metazoa; Arthropoda; Diptera; Brachycera;

Petryota; Neoptera; Endopterygota; Diptera; Brachycera;

Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

I (Bases il 27446)

Repreger.A., Lewis, S.E., Holt, R.A., Evans, C.A., Gocayne, J.D.,

Amanatides, P.G., Scherer, S.E., Li, P.W., Hoskins, R.A., Galle, R.E.,

George, R.A., Lewis, S.E., Richards, S., Ashburner, M., Henderson, S.N.,

Sutton, G.G., Wortman, J.R., Yandell, M.D., Zhang, O., Chen, L.X.,

Brandon, R.C., Rogers, Y.H., Blazej, R.G., Champe, M., Pfeiffer, B.D.,

Wan, K.H., Doyle, C., Baxter, E.G., Helt, G., Nelson, C.R., Gabor

Miklos, G.L., Abril, J.F., Abadari, D., Ballew, R.M., Besson, K.Y.,

Baxedale, J., Baytaktaroglu, L., Beasley, R.W., Besson, R.Y.,

Bencs, P.V., Berman, B.P., Brokstein, P., Brottier, P., Buttis, R.C.,

Botchan, M.R., Bouck, J., Brokstein, P., Brottier, P., Buttis, R.C.,

Busam, D.A., Buller, H., Cadleuer, C., Carraz, C., Ferriera, S.,

Cherry, J.M., Cawley, S., Dawle, C.C., Ferraz, C., Ferriera, S.,

Dodson, K., Doupp, L.E., Downes, M., Dugan, Rochas, S.,

Fleischmann, W., Fosler, C., Gabrielian, A.E., Garej, N.S.,

Genlbart, M.M., Glasser, K., Glocek, A., Goorge, C., Gorrell, J. H., Gu, Z.,

Guan, P., Harris, M., Harris, N. L., Harvey, D., Heiman, T.J.,

Hernandez, J.R., Houck, J., Hostin, D., Houston, K.A., Howland, T.J.,

Wei, M.H., Ibeqwam, C., Jalali, M., Kalush, F., Karpen, G.H., Ke, Z.,

```
INVELPILABENCOLONGERIA FUNDO CONTROLONGERO C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RORRINDLISNITKVPTPEAREIARILSSILVNGFSHESILPKPVPKLKLTFLICSVG
FTGPMLFDDKRSAFHLMISQFCAENGLKAFFEMFYWALSLDNVSQKFEFDQWASMEDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FYLIHIHOLAMQALRIWARRPIPNYGPSMFETMILILKKLIKSHQTLLDRYHTRMKE
IKFENLYIRSTDDGLNADHIKTLTDMGFMHYHVIEALRTNASLEEATDYLLNNPEASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DDDDDDEMSSASOQOQOPTTEGGGGGPSTPRTQQAGGVVGSGAGATGTPAAASQAVKV
VTPPEREAIPLIDYILNVWKFIEAIFSNSPNGDHCREFVLHGGLKPILQLLSLPNLPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DSPVSTTSQAVANVCKAILSQAQETKVLDVALKQLADIVAQLKPLIKHETFPGGSVLL
BELVCCQRLEDGFANBEYTPILHNMESVHGYVVMLVHLCKNASNDMRTILLKKNGVNR
BETGVQLLQQLQULQT SLVWESTILLMLCSDEPTQHPDLIWDETAAQMSAAAGTADFLT
BAELSRKLERAAEFRTKYTPEEQFRYIKSLLAASSRLGRALAELLGTLVKLSVOSPQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LSTTGGQSSSSAPPPPPPPSASTMDIDVDVPADGESTQSKSSTSPNSSYDYKHLKLMP
SLIFDRFCDEAISRAFEFMEAIPDTVNSAADLIAVLYRRHNHLNKQVFVTNFVRNIIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WVDFTLQLFEPAKTIGSKASRLEECLTGMTATRLFVRLKTSTLLLEENYSDLHRPLVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AITAQDAMYSLVKLLDCMSQWMLEQSTETNTGQQRATVPRWVQNLVDLIDAIDSISHI
LQRKANMRAVSSDVWRWYDASTGKWNAYSEANNELIRNAYAAGERWLYINIGRQRCTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIRSEKIPOLTVSDIKLKIKSVRTVYSKELRIWMREKELGRTYEPKLFWFRLADSFLR
SYSLSHCKROGKNUSSSAQLTITIKSDETSKLLCTAAADITMSEDALEBEBAEWORBPE
SCPLEESRPTASICKDDSTLCLADOPOQEHYSOGCSSSQQLPHTWAGRKSKYTTSLDS
AGEDDLITICQSIAACQLRTIPDSYSRSVAKLRIQQVLFBAETGGFQSTEVNSTOLONT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MKVDTVKLKKGSSELTAECRELIDELTKRRTRAELLEFLDTVHV
WIYGKCELYHWIEILDRFDKILEEASRHVNGNBFVLQCDTNFQETDYTLLLHVLNFTT
LLIEHSFSRHLYNSIEHLTVLLSSQNMDIVLAVLNLLYMFSKRSNFIPRLPFEKKELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOSHEDDKRDCPEGTGEFLDAWLQLLEKMVNPRAMLDSPYTMSPRLNYMPDSVPFEPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLNCMTQVSEASGTHRPVCPALKLSEAITSLNNPVALHKVEHILNRVVRTAPDGSGTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MSKLSDTKIPITEFLEAYRRQPCLYNTLLDSYKNRVSREEAYGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     join(<7954. .8220,8556. .8795,8865. .9086,9145. .9416,9497. .9993,10131. .10515,10567. .15238,15758. .18218. .18218,18214. .19154,19217. .2028,72038. .20513,20573. .22032,22060. .23197,23270. .23671,23739. .23827,23929. .24313,24377. .24542,24617. .24807,24885. .>24987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /map="13E14-13E16"
/db_xref="FLYBASE:FBan0008184"
/db_xref="FLYBASE:FBan00030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/db_xref="FLYBASE:FBan0030674"
/dene="FLYBASE:FBan0030674"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="CT24358"
/db_xref="FLYBASE:FBan0008184"
/db_xref="FLYBASE:FBgn0030674"
/db_xref="CG8184"
/gene="CG8184"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="FLYBASE:FBan0008184"
/db_xref="FLYBASE:FBan0030674"
/protein_id="AAF48495.1"
/db_xref="GI:7293111"
                                                                                                                                                                                                                                                                      /db_xref="FLYBASE:FBgn0030673"
/evidence=not_experimental
/protein_id="AAF48494.1"
/db_xref="G17293110"
                                                                                                                                                                                                                                        db_xref="FLYBASE:FBan0015601"
           join(4963. .5295,5348. .5848)
/gene="CG15601"
/note="CG15601 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="CG8184 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .1504,1572. .2077,2153. .2813))
Kennison, J.A., Ketchum, K.A., Kimmel, B.E., Kodira, C.D., Kraft, C., Kravitz, S., Kulp, D., Lai, Z., Lasko, P., Lei, Y., Levitsky, A.A., Li, Y., Li, Z., Liang, Y., Lin, X., Mattel, B., McIncosh, T.C., McLeod, M.P., McPherson, D., McHulov, G., Milshina, N.V., Morbry, L., Muzny, D.W., McPherson, D., McHulov, G., Milshina, N.V., Muzphy, L., Musny, D.W., Moshefi, A., Mount, S.M., Moy, M., Murphy, B., Murphy, D., Musskern, D.L., Nelson, D.R., Nelson, D.R., Paleson, D.R., Paleson, G.S., Pan, S., Pollard, J., Putl, V. Redee, M.G., Refinert, K., Remington, K., Supski, M.P., Shne, B.C., Siden Klamos, I., Simpson, M., Skupski, M.P., Shne, B.C., Spradling, A.C., Stapleton, M., Stupski, M.P., Shne, B.C., Spradling, A.C., Stapleton, M., Weissenbach, J., Wang, Z.Y., Wassarman, D.A., Weissenbach, J., Wang, Z.Y., Wassarman, D.A., Worley, K.C., Wu, D., Yang, S., Yao, Q.A., Yeh, R.F., Zhen, W., Zhon, W., Zhou, S., Zheng, L., Zheng, X.H., Zhong, W., Zhou, S., Zhu, S., Smith, H.O., Glibbs, R.A., Myers, E.W., Zhou, X., Zhu, S., Zhu, X., Smith, H.O., Glibbs, R.A., Myers, E.W., Mulbin, G.W. and Venter, J.C.

The genome sequence of Drosophila melanogaster
NE 20196006

Standard, M. Stong, W., Zhou, S., Zhu, S., Zh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(join(772. .903,968. .1504,1572. .2077,2153. .2821,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FSGGWRMRIALAARALFVKPHLLLLDEPTNHLDLDACVWLEEELKTYKRILVLISHSQD
FLNGVCTNIIHLTGKRLKYYTGNYEAFVRTRMELLENOMKQYNWEQDQISHMKNYIAR
FGHGSAKLARQAQSKEKTLAKMVAQGLTEKVSDDKVLNFYFPSCGKVPPPVIMVQNVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RIARYHQHLHELLDLDASPLEYMMRAFPDVKEKEEMRKIIGRYGLTGRQQVCPIRQLS
DGQRCRVVFAWLAWQVPHLLLLDEPTNHLDMETIDALADAINDFDGGWYLVSHDFRLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MSSAAKKREAQKKKDARNKKIQQIPSTKKANGVPERELTEEEKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAKLEEEARISAEARSCTGSLAVHPRSRDVKIANFSITFFGSELLQDTMLELNCGRRY
GLIGLNGCGKSSLLAVLGGREVPVPPHIDIFHLTREIPASSKSALQCVMEVDEERIKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EKLAEELAMSEEDDAQEQLIDIYERLDDMSADLAEVKAARILHGLGFDKAMQQKQAKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRYNDETPWIYKNLEFGIDLDTRLALVGPNGAGKSTLLKLLYGDLVPTSGMIRKNSHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (21-MAR-2000) Celera Genomics, 45 West Gude Drive,
Rockville, MD, USA
On Oct 9, 2000 this sequence version replaced g1:7293108.
Location/Qualifiers
1. 327446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NQVAEEIWVCEKETVTKWKGGILDYKDHLKNKITSENEKKAKAGK'
join(<4963. .5295,5348. .>5848)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/chromosome="x"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="FLYBASE:FBan0009281"
/db_xref="FLYBASE:FBgn0030672"
complement(join(772...903,968...
/gene="CG9281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="FLYBASE:FBan0009281"
/db_xref="FLYBASE:FBgn030672"
/protein_id="AAF/8493.1"
/db_xref="GI:7293109"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="FLYBASE:FBan0015601"
/db_xref="FLYBASE:FBgn0030673"
/evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="FLYBASE:FBan0015601"
/db_xref="FLYBASE:FBgn0030673"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="FLYBASE:FBan0009281"
/db_xref="FLYBASE:FBgn0030672"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="CG9281 gene product"/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(<772. .>4380)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'product="CT26402"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /map="13E12-13E14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'product="CI35724"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4145. .>4380))
/gene="CG9281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="CG15601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
```

DGDPDVDPISGPSAAQAEAYLYERLGSGLMPTPPVGFRVRMNSSIAQPLDLDVNGGNA
GSGSNAGATGSSGGSQRSSTGGTTASIGAIARSSGSWAAPDRNFIRISGGDS
SAGSQPAIGANAGGDMVPTPPSAEBRAGGAPGSGCVBELLNEQPTGAGGGCGG
SAGSGPAIGANAGGDMVPTPPSAELLXLDQQXCVCWPTHQNPTEETQMETF
TQDALHWWLEBATLLDMESQTDACLYAAHFLLPHLIKELKAAHQQRKQEBAARGSTTP GEYLINTNSTTLADDARVMVKSKFGQQPTAAAGGATPHNQTPTPPPAAKDELKDDPQV

1; Gaps DB 3; Length 327446; Query Match 33.9%; Score 279.2; DB 3; Length Best Local Similarity 68.1%; Pred. No. 6.5e-37; Matches 403; Conservative 0; Mismatches 188; Indels

133 tecagegiggeceggetgtgeaggeacgaggtgtecateagagegtggeeacegatgge 192

Db 276717 Tressecersecesererantresecersserseseceasaaaaaacerrecagras 276658

193 ccaagcagcaccagcctgcctgccaaaggccagagccgtggctcccaaacccagcagc 252

ά

Db 276657 CGAAGTGGCCCAAAATCTGCCCAAGAGGGCTACTCTCCGTTCGGCACCAAACAGTCCTC 276598

Db 276597 cerrecesagiesreacresceasacresacearciaereacresacresacresas 253 cggggc-gagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttc 311 ΟŽ

Db 276537 GATCTGGCCACTGACTTTCGGTTTGGCCTGCTGTGCCGTCGAAATGATGCACATCGCTGC 276478 312 totgiggeccatgacetteggeetggeetgeegeegtggagatgatgaeatggeage 371 δ

QY 372 acccgctacgacatggaccgctttggcgtggtcttccgcgccagcccggccagtccga 431 Db 276477 TCCGCGTTACGATATGGTGTTGTTGTTTCCGTGCATCTCCACGTCAGGCCGA 276418

432 cytcatgatcytggccggcacactcaccaacaagatggccccagcgcttcgcaaggtcta 491 ò

Db 276417 TGTCATCGTCGCTGGCACGCTGACCAACAAAATGGCACCGGCCCTGCGAAAGGTCTA 276358

Db 276357 CGACCAAATGCCCGAGCCACGTTGGGTCATCTCCATGGGCAGCTGTGCCAACGGCGGCGG 276298 492 cgaccagatgccggagccgcgtacgtggtctccatggggagctgcgccaacggaggagg 551 ò

Db 276297 CTACTACCATTACTCGTACTCCGTCGTGGCTGCGATAGGATAATCCCCGTCGACAT 276238 ctactaccactattcctactcggtggtgaggggtgcgaccgatcgtgcccgtggacat 611 552 δ

Db 276237 ATACGTACCCGGTTGTCCGCCAACCGCGGGGCTCTATGCAGCGTTTTGCAGCTGCA 276178 612 ctacatcccaggetgcccacctacggccgaggccctgctctacggcatcctgcagetgca 671

276177 GAAGAAGGTTAAGCGGATGAAGACGCTCCAGATGTGGTATAGGAAGTAAGGC 276126

Search completed: February 12, 2002, 17:25:48 Job time: 2039 sec

790

83

263 670 203 730

S

us-09-525-867-9_1.rng

```
The present invention describes isolated polypeptides, comprising an immunogenic portion of a prostate tumour protein (PTP). The polypeptides and polypurclectides encoding them have cytostatic activity and can be used in vaccines and in gene therapy. The polypeptides and polypurclectides encoding them, antigen presenting cells which express the polypeptides, antibodies against the polypeptides and vaccines comprising them can be used for inhibiting the development of prostate
                                                                                                                                                                                                  202 AGAGGAANATCAAGGGGAGCGGAGGCTGCANATTTGGTACCGCAGGTAGGGCCGCGCGCCC 143
                                          381 AAGACCAGATGCCGGAGCCGCGANAAGTGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunogenic prostate tumour protein cDNA sequence SEQ ID NO:32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; prostate cancer; diagnosis; tumour; gene therapy; detection; immunogenic; cytostatic; vaccine; ss.
                                                                                                                                                                                                                                        New polypeptide useful for treating and diagnosing prostate cancer comprises an immunogenic portion of prostate tumor protein -
                                                                                        GGTAANACCACTATTCCTAATNGGTGGTGAGGGGUTGCGACCGCATTGTGCCCGTGGAAA
                                                                                                                                                                                   agaggaagatcaagcgggagcggaggtgcagatctggtaccgcaggtagcgccgccgcc
                                                                                                                             tctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctgc
                                                                                                                                           acgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggag
                                                                      gctactaccactattcctactcggtggtggggggtgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mitcham JL;
                                                                                                                                                                                                                                                                                             791 aataaacctgccctcgggcaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                             Xu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yuqin J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 50; Page 110; 263pp; English.
                                                                                                                                                                                                                                                                                                                                                                                              ΒP
                                                                                                                                                                                                                                                                                                                                                              RESULT 6
AAA06272/c
ID AAA06272 standard; cDNA; 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0115453.
98US-0116134.
98US-0159812.
98US-0159822.
99US-0232149.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US15838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0288946
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Harlocker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-171268/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200004149-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dillon DC,
                                                                                                                                                                                                                                                                                                                                                                                                                       AAA06272;
                                                                                                                           611
                                                                                                                                                      262
                                                                      551
                                                                                                 322
                                                                                                                                                                                 671
                                                                                                                                                                                                                                                                                                                       82
                491
                                         g
                                                                                         Q
                                                                                                                          δ
                                                                                                                                                g
                                                                                                                                                                          ŏ
                                                                                                                                                                                                      DP.
                                                                                                                                                                                                                              οχ
                                                                                                                                                                                                                                                             Вb
                                                                                                                                                                                                                                                                                             ōλ
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                     ΩŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       This sequence represents a human prostate tumour specific gene, and can be used in the method of the invention. The method is for detecting prostate cancer comprises contacting a biological sample with an agent able to bind an immunogenic portion of a prostate protein (such as encoded by this sequence). An antibody which binds to an immunogenic portion of the prostate protein, and the method can be used to detect, monitor progression of, or treat prostate cancers. The antibody my also be conjugated to a therapeutic agent for use in therapy of prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                            - useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619 GGATTTGGGGGCCAAGGGGGGATGACTTGTTGAAACTGGGNCCCCCGGAGNTTTTTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCGAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cacccagcctgcccaaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 679 GGANCCANCTIGCCNNCCAAAGNNAGAGGCGIGGGTICCCAAACCCAGNAANCGGGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g---cccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cocceptaceaceategaccectttegeceteg--tcttccgcccagcccagccagtccg
                                                                                           Prostate tumour specific gene; human; prostate cancer; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANATNGCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 789;
                                                                                                                                                                                                                                                                                                                                                                                       Novel human prostate specific tumour protein and fragments for detecting and treating prostate cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 2.1e-75;
0; Mismatches 154; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;

    fragment of prostate tumour specific gene J1-21.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 384.6; DB 19;
Pred. No. 2.1e-75;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 50; 141pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.78;
75.98;
                                                                                                                                                                                                                                               98US-0904809.
97US-0806596.
97US-0904809.
                                                                                                                                                                                                                        98WO-US03690
                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 75.9
ses 527; Conservative
                                                                                                                                                                                                                                                                                                       (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-480805/41.
                                                                                                                                                                                                                                                                                                                                Dillon DC, Xu J;
                                                                                                                                       Homo sapiens
                                                                                                                                                                 WO9837418-A2
                                                                                                                                                                                                                                               09-FEB-1998;
25-FEB-1997;
01-AUG-1997;
                                                                                                                                                                                                                      25-FEB-1998;
                                         08-DEC-1998
                                                                                                                                                                                            27-AUG-1998
                                                                                                              therapy;
             AAV58509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                431
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
```

```
7;
cancer in a patient. The polypeptides can be used to generate antibodies or anti-idiotypic antibodies for passive immuno therapy. A portion of the polynoclectides encoding the polypeptides can be used as a probe or to modulate the expression of the polypeptides. AAA06241 to AAA06691 and AAA82000 to AAY82020 represent sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                           440
                                                                                                                                                                                                                                                                                                                                                             372
                                                                                                                                                                                                                                                                                                                                                                                                                 430
                                                                                                                                                                                                                       680
                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                        317
                                                                                                                                                                                                                                                                                                                                  560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gccgccgccggagcctgtcgcccgtcccagcctgctgtatcccgtgagattgtc 790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgcgccgccgcc 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                                                             GGATTIGGGGGCCAAGGGGGATGACTTIGTTGAAACTGGGNCCCCCGGAGNTTTTTGN
                                                                                                                                                                                               gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                   GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCCGAAGGG
                                                                                                                                                                                                                                                                          GGANCCANCTTGCCNNCCAAAGNNAGAGGCGTGGGTTCCCAAACCCCAGNAANCGGGGGGA
                                                                                                                                                                                                                                                                                                      gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg
                                                                                                                                                                                                                                                                                                                                                          g----cccatgaccttcggcctggcctgccgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                              TINAMATICCCAGGGTGCCCACCNANGGCCGAGGCCCTGTTTANGGCATCCTGCAGCTGC
                                                                                                                                                                                                                                                   cacccagcctgcccaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                                                                                                                                                                                                                                                                                                   GGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANATNGCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acgicatgategiggeeggeacacteaceaaeaagatggeeeeagegettegeaaggtet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGACCAGATGCCGGAGCCGCGANAAGTGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gctactaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGGAANATCAAGCGGGAGCGGAGGCTGCANATTTGGTACCGCAGGTAGGCCGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             coccyctacyacatygaccyctttggcgtgg--tcttccycgcagcccagccagtccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctgc
                                                                                                                                                                     13;
                                                                                                                                          21; Length 789;
                                                                                                                                                                     Indels
                                                                                                 G; 195 T; 66 other;
                                                                                                                                       Score 384.6; DB 21;
Pred. No. 2.1e-75;
0; Mismatches 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATAAACCTGCCCTNGGNAAAAAAAAAAAAA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aataaacctgccctcgggcaaaaaaaaaaaaa
                                                                                                 C; 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tumour cDNA J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             789
                                                                                                                                       Ouery Match
Best Local Similarity 75.9%;
Matches 527; Conservative
                                                                                                 Sequence 789 BP; 129 A; 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-0CT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS10031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAS10031
                                                                                                                                                                                                                                                                                                                                                                                                           373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human
                                                                                                                                                                                             141
                                                                                                                                                                                                                      739
                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                                                    559
                                                                                                                                                                                                                                                                                                                                                                                                                                      499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                                         318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                791
    8888888888
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                      å
                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΩX
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XEXEX
```

```
development
                                                                                                                                                                                                                                                polynucleotide encoding polypeptide comprising a portion of site tumour protein useful for inhibiting development of prostate or for treating prostate cancer in a patient
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acgteatgategteggeeggeacaeteaceaaaaagatggeeeceagegettegeaaggtet 490
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANATNGCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCCACCGGGGGCCCCGAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGATTTGGGGGCCAAGGGGGATGACTTGTTGAAACTGGGNCCCCCGGAGNTTTTTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g----cccatgaccttcggcctgcctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                                                               141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cacccagcctgcccaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                coccyctacgacatggaccyctttggcgtgg--tcttccgcgcccagcccggcgcagtccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A-GINATGATTGTGGCCNGGNANANTAACCAAAAAGAGGCCCCAGNG-TTTGCAAGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGACCAGATGCCGGAGCCGCGGANAAGTGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gotactaccactattcctactcggtggtgaggggttgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTAANACCACTATTCCTAATNGGTGGTGAGGGGNTGCGACCGCATTGTGCCCGTGGAAA
                                                                                                                                                                                                                                                                                                                       The sequence is a human prostate tunmour cDNA which encodes a partial tunmour protein. The DNA is useful for inhibiting the devof prostate cancer or for treating prostate cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                       13;
                                                                                                                                                                                                                                                                                                                                                                                                              Length 789;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                         Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
     SS.
                                                                                                                                                                                                                                                                                                                                                                                                           Score 384.6; DB 22;
Pred. No. 2.1e-75;
); Mismatches 154; 1
   cancer;
  prostate
                                                                                                                                                                                                                                                                                               Example 1; Column 54-5; 105pp; English
  protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                                                                                                                              46.78;
75.98;
                                                                                                                       97US-0806099.
97US-0904804.
98US-0020956.
                                                                                                 98US-0030607
                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
prostate tumour
                                                                                                                                                                         CORP.
                                                                                                                                                                                                                        WPI; 2001-440862/47
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 527; Conserv
                                                                                                                                                                                                 Dillon DC;
                                                                                                                                                                         (CORI-) CORIXA
                                               US6262245-B1
                                                                                                 25-FEB-1998;
                                                                                                                                   01-AUG-1997;
09-FEB-1998;
                                                                                                                        25-FEB-1997
                                                                        17-JUL-2001
                                                                                                                                                                                                                                                             prostate t
  Human;
                                                                                                                                                                                                 Χu J,
                                                                                                                                                                                                                                                 Novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             611
 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΫ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
```

7;

```
The present invention describes polynuclectide sequences (I) which encode prostate-specific proteins (II). (I) and (II) have cytostatic activity, and can be used in vaccine production and gene therapy. (I). (II), anticodies to (II), fusion proteins comprising (II), and isolated control to the prepared using (I) or (II) are used treat cancer in a patient. (I) and the antibodies are also used in the detection of cancer in a patient. The cancer that is diagnosed or treated is particularly prostate cancer. (I) and (II) can be used in vaccines. The antibodies or (I) can be used for monitoring the progression of cancer in a patient. (I) and (II) can also be used to improve diagnostic and therapeutic methods for prostate cancer. They can indicate the level of metastasis can well as the prostate volume. AAH93357 to AAH93944 and AAM01115 to AAM01318 represent polynucleotide and amino acid sequences used in the exemplification of the present invention.
                                                                                                                                                   790
                                                                     202 AGAGGAANATCAAGCGGGAGCGGGGGCTGCANATTTGGTACCGCAGGTAGGGCCGCCGCC 143
                                                                                                                                                                                                                     83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New polynucleotide encoding a prostate-specific protein, for diagnosing, monitoring and treating prostate cancer in a patient and for use in vaccines -
agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgcc
                                                                                                                                                                                  gccgccgcagagcctgtcgccgtcctgtccccagcctgcttgtgtcccgtgaggttgtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human, prostate cancer, prostate-specific, diagnosis, vaccine, cytostatic, gene therapy, metastasis, ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Harlocker SL, Jiang Y, Reed
Retter MW, Stolk JA, Skeiky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human prostate-specific 3' cDNA sequence J1-21
                                                                                                                                                                                                                                                                                           791 aataaacctgccctcgggcaaaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                              82 AATAAACCTGCCCTNGGNAAAAAAAAAAAAA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 240; 543pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH93388 standard; cDNA; 789 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xu J, Dillon DC, Mitcham JL,
Kalos MD, Fanger GR, Day CH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-JAN-2000; 2000US-0483672,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-JAN-2001; 2001WO-US01574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Meagher MJ:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-425873/45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200151633-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAH93388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wang A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH93388/c
                                                                                                                                                   731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAMES OF COLORS OF STREET AND STR
                                                                     g
                                                                                                                                                                                                                                                                                                                                                                 QQ
   ŏ
                                                                                                                                                                                                              οg
                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                   ŏ
```

```
670
                                                                                                                                                                                                                                                                                                                                                                                                                                                            790
                                                         620
                                                                                            372
                                                                                                                                                                           430
                                                                                                                                                                                                 440
                                                                                                                                                                                                                         490
                                                                                                                                                                                                                                                                                            323
                                                                                                                                                                                                                                                                                                                    610
                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGCCCCGAAGGG
                                               g----cccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                          GGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANATNGCAGCAA
                                                                                                                                                                                          geogeoegoeggageetgtegeegteetgteecageetgettgtgteecgtgaggttgte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg
                                                                                                                                                                           373 ccccgctacgacatggaccgctttggcgtgg.-tettccgcgcccagcccagtccg
                                                                                                                                                                                                                         acgtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtct
                                                                                                                                                                                                                                              439 A-GINAIGAIIGIGGCNGGNANANIAACCAAAAAGAGGGCCCCAGNG-TIIGCAAGGIII
                                                                                                                                                                                                                                                                                                                     gctactaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                GGTAANACCACTATTCCTAATNGGTGGTGAGGGGNTGCGACCGCATTGTGCCTGGGGAAA
                                                                                                                                                                                                                                                                                                                                                                 611 tetacateceaggetgeceacetaeggeegaggeeetgetetaeggeateetgeagetge
                                                                                                                                                                                                                                                                                                                                                                                                                agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgcc
                                  cacceagectgecetagecaaaggeeagageegtggeteecaaaeceageageegaggggggg
                                                                                                                                                                                                                                                                       acgaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          t eye syndro
chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; prostate cancer; therapy; diagnosis; cat chromosome 22q11.2; prostate-specific protein; cprostate specific antigen; PSA; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human prostate-specific 3' cDNA sequence J1-21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            791 aataaacctgccctcgggcaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATAAACCTGCCCTNGGNAAAAAAAAAAAAA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
AAH84702/c
tD AAH84702 standard; cDNA; 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0439313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000WO-US30904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200134802-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAH84702;
           739
                                                                                                                                                                                                                                                                                                                    551
                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                              318
                                                                                                                                                                                                                         431
                                                                                                                                                                                                                                                                      491
                                                                                                                                                                                                                                                                                                                                                                                                                                                            731
         qd
                                                    Db
                                                                                                     g.
                                                                                                                                              Ď
                                                                                                                                                                                                                      \delta \lambda
                                                                                                                                                                                                                                            ф
                                                                                                                                                                                                                                                                   δŽ
                                                                                                                                                                                                                                                                                       ΩÞ
                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                δŽ
                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            \overset{\diamond}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó
                                                                              Qγ
                                                                                                                       δ
```

7;

Length 789;

141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag 200

à

Query Match
46.7%; Score 384.6; DB 22; Length
Best Local Similarity 75.9%; Pred. No. 2.1e-75;
Matches 527; Conservative 0; Mismatches 154; Indels

```
qq
                                                                                                                                              g
                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                                                                                                                                                                                                                                                                                      The present invention describes an isolated polypeptide (P1) comprising at least an immunogenic portion of a prostate-specific protein, or its variant. Also described are polynuclecides (N1) encoding (P1). (P1) and (N1) have cytostatic activity and can be used in vaccine production. The polypeptides, nucleic acids and antibodies from the present invention are useful in the diagnosis and therapy of prostate cancer. Prostate specific genes P704P, P712P, P774P, P775P and B305D are located in a genomic region on chromosome 22411.2 known as the Cat Eye Syndrome region. Prostate specific antigen (PSA) P501S was located on repolynucleotide and polypeptide sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCCACCGGGGGCCCCGAAGGG 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgcc 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                Isolated polypeptide comprising at least an immunogenic portion of prostate-specific protein, useful in the diagnosis and therapy of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   679 GGANCCANCTIGCCNNCCAAAGNNAGAGGCGIGGGITCCCAAACCCAGNAANCGGGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATTTGGGGGCCAAGGGGGATGACTTTGTTGAAACTGGGNCCCCCCGGAGNTTTTTTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g----cocatgaccttcggcctggcctgcgccgtggagatgatgcacatggcagc-a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199 CCCGNNAAGACATGGNCCGGTTTTGGGGNGNTTTTTTGGGGCCAGCCCGNGCCAGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acgaccagatgccggagccgctacgtggtctccatggggagctgcgccaacggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCCNCAAGAACTTTTGGGTTGNCCTGNTGNGCCCGGGAGGTGATGNANATNGCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acgtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             381 AAGACCAGATGCCGGAGCCGCGANAAGTGGTTTCCANGGGGAG-TGNGCCAACGGNGGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tctacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262 TINAAATCCCAGGGIGCCCACCNANGGCCGAGGCCCTGTTTANGGCATCCTGCAGCTGC
                                                      SG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cccgctacgacatggaccgctttggcgtgg--tcttccgcgccagcccgcgccagtccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gotactaccactattcctactcggtggtggtgggggtgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202 AGAGGAANATCAAGCGGGAGCGGAGGCTGCANATTTGGTACCGCAGGTAGGGCCGCCCCC
                                                                           Wang A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 789;
                                                      Reed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 384.6; DB 22; Length
Pred. No. 2.1e-75;
0; Mismatches 154; Indels
                                                 SL, Jiang Y
Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                 Harlocker;
, Day CH,
                                                                                                                                                                                                                                                                Claim 31; Page 140; 325pp; English.
                                                 Mitcham JL, F
W, Stolk JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 75.9%;
Matches 527; Conservative
                                                                     Retter MW,
                                                                                                                 WPI; 2001-308785/32.
(CORI-) CORIXA CORP
                                                 Dillon
                                                                     Kalos MD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              431
```

g

9. 0.7 0.0 qq

ŏ

g

á

g &

oy Ob Oy

```
The present invention describes an isolated polypeptide (I) comprising at least an immunogenic portion of a prostate tumour antigen protein or its variant. (I) have cytostatic activity and can be used in vaccine production. (I), prostate tumour antigen polynucleotides, an antigen presenting cell (APC e.g. a dendritic cell) that expresses (I), and a pharmaceutical composition containing (I) are useful for inhibiting the pharmaceutical composition containing (I) are useful for inhibiting the specific proteins and oligonucleotides that hybridise to a polynucleotide that encodes a prostate specific protein are useful for detecting the presence or absence of a cancer or monitoring the progression the progression of a cancer, especially prostate cancer. AAH02422 to AAH2872, AAB74798 to AAB74821 and AAB74830 are sequences used in the exemplification of the present invention.
620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Prostate specific protein and its encoding polynucleotide, useful for the treatment and diagnosis of prostate cancer - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          739 GGGGGATGGTGNNNAGGANGGNGTTTTCNTTAGAGNNGGGCCCACCGGGGGGCCCGAAGGG 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtatgtggtggccaagctggatgacctcgt---caactgggcccgccggagttctctgtg 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       prostate tumour antigen; prostate tumour; therapy; diagnosis; e.cancer; immunogenic; cytostatic; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201 cacccagcetgecetgecaaaggecagageegtggeteecaaaeecageageeggggega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGANCCANCTTGCCNNCCAAAGNNAGAGGCGTGGGTTCCCAAAACCCAGNAANCGGGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141 gggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Prostate tumour antigen determined 3' cDNA sequence for J1-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 46.7%; Score 384.6; DB 22; Length Best Local Similarity 75.9%; Pred. No. 2.1e-75; Matches 527; Conservative 0; Mismatches 154; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 789 BP; 129 A; 240 C; 159 G; 195 T; 66 other;
                                                                                                                                             791 aataaacctgccctcgggcaaaaaaaaaaaa 824
                                                                                                                                                                                    MA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cheever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 50; Page 132; 276pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SG,
                                                                                                                                                                                                                                                                                                                                                                                                         AAH02453 standard; cDNA; 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000WO-US27464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0157455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Reed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-245062/25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Skeiky YAW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               prostate cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200125272-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAH02453;
                                                                                                                                                                                                                                                                                                                                                             AAHO2453/C
ID AAHO24
AC AAHO24
XX AAHO24
XX I - JUN
XX HUMAN;
XW Prosta
XX HOMO S
XX HOMO S
XX HOMO S
XX CORI-

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Xu σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  261
```

us-09-525-867-911.rng

```
990S-0131449
990S-0132484
990S-0132485
990S-0132486
990S-0132486
990S-0132486
990S-0134256
990S-0134256
990S-0134219
990S-013523
990S-013523
990S-013523
990S-013523
990S-0135353
                                                                                                                                                                                                                                                                                                                                                                                99US-0138540.
99US-0138847.
99US-0139119.
                                                                                                                                                                                                                                                                                                                                                                                                                    9905 - 0139459
9905 - 0139459
9905 - 0139461
9905 - 0139462
9905 - 0139750
9905 - 0139763
9905 - 0139787
9905 - 0139817
9905 - 0140853
9905 - 0140823
9905 - 0140823
9905 - 0140823
9905 - 0140823
9905 - 0140823
9905 - 0140823
9905 - 0140823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0142390.
99US-0142803.
99US-0142920.
99US-0142977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0143624.
99US-0144005.
99US-0144085.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0144331.
99US-0144332.
99US-0144333.
                   99US-0130510.
99US-0130891.
      99US-0130449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0143542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0144086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0144334
99US-0144335
               23 - APR-1999;
28 - APR-1999;
30 - APR-1999;
30 - APR-1999;
04 - MAX-1999;
05 - MAX-1999;
06 - MAX-1999;
06 - MAX-1999;
07 - MAX-1999;
11 - MAY-1999;
14 - MAX-1999;
                                                                                                                                                                                                                                                              24 - MAY - 1999;
25 - MAY - 1999;
27 - MAY - 1999;
01 - JUN - 1999;
03 - JUN - 1999;
04 - JUN - 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18 - JUN - 1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22 - 70N - 1999;
23 - 70N - 1999;
24 - 70N - 1999;
28 - 70N - 1999;
29 - 70N - 1999;
30 - 70N - 1999;
                                                                                                                                                                        14-MAY-1999;
14-MAY-1999;
14-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                10-JUN-1999;
10-JUN-1999;
14-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUN-1999;
18-JUN-1999;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-1999;
01-JUL-1999;
02-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-JUL-1999;
08-JUL-1999;
09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12-JUL-1999;
13-JUL-1999;
14-JUL-1999;
16-JUL-1999;
16-JUL-1999;
19-JUL-1999;
19-JUL-1999;
19-JUL-1999;
19-JUL-1999;
19-JUL-1999;
19-JUL-1999;
19-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-JUN-1999;
18-JUN-1999;
                                                                                                                                                                                                                                                     21-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                        07-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             8-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-JUN-1999;
                                                                                                                                                                                                              18-MAY-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                        6-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                  -30N-1
                                                                                                                                                                                                                                                                                                                                                                                                                                   6-JUN-1
     670
                                                                                                                                                                                                                                                                                                                                                         730
                                                                                           430
                                                                                                                     440
                                                                                                                                                                       382
                                                                                                                                                                                                                           323
                                                                                                                                                                                                                                                   610
                                                                                                                                                                                                                                                                                                                               203
                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                         9----cccatgaccttcggcctggctgctgcgccgtggagatgatgcacatggcagc-a
                                                         acgicalgategiggeeggeacacteaceaacaagatggeeceagegettegeaaggiet
                                                                                                                                                                                                                                                  gctactaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic; pathway; promoter; termination sequence; corn; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            791 aataaacctgccctcgggcaaaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zea mays DNA fragment SEQ ID NO: 39953.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9905-0121825.
9905-0123180.
9905-0125788.
9905-0125788.
9905-0126785.
9905-01276785.
9905-01276785.
9905-0128234.
9905-0128234.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC43639 standard; DNA; 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays subsp. mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
01-APR-1999;
06-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-APR-1999;
16-APR-1999;
19-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAC43639;
                                       318
                                                                                         373
                                                                                                                 499
                                                                                                                                                                                                                                                                         322
                                                                                                                                           431
                                                                                                                                                                    439
                                                                                                                                                                                              491
                                                                                                                                                                                                                       381
                                                                                                                                                                                                                                                 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAC43639

ID AAC4

XX
AC
ACA
XX
DT
I7-0
XX
WW
Hybr
XX
XX
Prot
XX
CS
CS
XX
CS
CS
XX
PR
PR
CS
PR
C
                                       δÿ
                                                            g
                                                                                      ò
                                                                                                                g
                                                                                                                                          ò
                                                                                                                                                              QQ
                                                                                                                                                                                           οy
                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                     δŻ
                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                     δŽ
                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

```
20.7011-1999; 9901S 014452.

20.7011-1999; 9901S 014484.

21.7011-1999; 9901S 014484.

22.7011-1999; 9901S 014484.

22.7011-1999; 9901S 014508.

22.7011-1999; 9901S 014701.

22.7011-1999; 9901S 014701.

22.7011-1999; 9901S 014701.

22.7011-1999; 9901S 014701.

23.7011-1999; 9901S 014701.

24.7011-1999; 9901S 014701.

25.7011-1999; 9901S 014701.

26.7011-1999; 9901S 01440.

27.7011-1999; 9901S 01440.

28.7011-1999; 9901S 01440.

2901S 01440.

2901S 01440.

2901S 01440.

20.7011-1999; 9901S 01450.

20.7011-1999; 9901S 01450.

20.7011-1999; 9901S 01450.

20.7011-1999; 9901S 0150.

20
```

```
cogetacgacatggacogetttggcgtggtettecgcgcgcagecoggccagtecgacgt 434
                                                                                                                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                                                                                                                                                                           614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              598
                                                                                                                                                                                                                                                                   255 gggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctct 314
                                                                                                                                                                                                                                                                                                                                                                                                                                       ccaaatgcctgagcctaggtgggttatttcaatgggcagctgtgccaacggtggtggtata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ccagatgccggagccgcgctacgtggtctccatggggagctgcgaccaacggaggaggcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cateceaggetgeceacetaeggeegaggeeetgetetaeggeateetgeagetgeagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctaccactattcctactcggtggtgggggtggcgaccgcatcgtgcccgtggacatcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   egtecetgggtgeceaecaaetgetgaggeaetgetgtaeggegttetteagetecaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gaagatcaagcgggagcggaggtgcagatctggtaccgcaggtagcgccgcc 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                              Length 911;
                                                                                                                                                                                                                           Score 279.2; DB 21; Length
Pred. No. 2.4e-52;
0; Mismatches 123; Indels
        9905 - 0159637
9905 - 0159638
9905 - 0159618
9905 - 0160767
9905 - 0160770
9905 - 0160770
9905 - 0160770
9905 - 0160980
9905 - 0160980
9905 - 0161908
9905 - 01611405
9905 - 01611405
9905 - 01611360
9905 - 01611360
9905 - 01611360
9905 - 01611360
9905 - 01611360
9905 - 01611360
9905 - 01611360
                                                                                                                                                                                                                            Query Match 33.9%;
Best Local Similarity 74.2%;
Matches 353; Conservative (
99US-0159331
                                            21-067-11
21-067-11
21-067-11
21-067-11
22-067-11
22-067-11
25-067-11
25-067-11
25-067-11
                                                                                                                                                           26-0CT-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
AAC36686
                                                                                                                                                                                                                                                                                                                                                                                                   419
                                                                                                                                                                                                                                                                                                                                                                                                                                        479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        629
                                                                                                                                                                                                                                                                                                                                                                                 435
                                                                                                                                                                                                                                                                                                                                                                                                                     495
                                                                                                                                                                                                                                                                                                                                                                                                                                                           522
δŏ
                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway;

Arabidopsis thaliana DNA fragment SEQ ID NO: 14712

17-OCT-2000 (first entry)

ВР

AAC36686 standard; DNA; 937

AAC36686;

ö

```
9905-0140923
9905-0140991
9905-0141842
9905-0141842
9905-0142055
9905-0142050
9905-0142050
9905-0142050
9905-0144032
9905-0144331
9905-0144035
9905-0144035
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0144331
9905-0149368
9905-0149368
9905-0149368
                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-AUG-1999;
17-AUG-1999;
20-AUG-1999;
20-AUG-1999;
20-AUG-1999;
23-AUG-1999;
25-AUG-1999;
25-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
21-AUG-1999;
21-AUG-1999;
21-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                         09-AUG-19
10-AUG-19
11-AUG-19
metabolic pathway; promoter; termination sequence; ss.
                                                                             99US - 0.121825

99US - 0.123180

99US - 0.123788

99US - 0.125788

99US - 0.126745

99US - 0.126746

99US - 0.126714

99US - 0.126714

99US - 0.130077

99US - 0.131449

99US - 0.132486

99US - 0.134218

99US - 0.134451

99US - 0.134451

99US - 0.139452

99US - 0.139453

99US - 0.139453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0139899.
99US-0140353.
99US-0140354.
99US-0140695.
                                                               25-FEB-2000; 2000EP-0301439
                Arabidopsis thaliana
                               EP1033405-A2
                                               06-SEP-2000
```

```
561 ctattectaeteggtggtgaggggetgegaeegeategtgeeegtggaeatetaeateee
                              Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway; promoter; termination sequence; ss.
                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana DNA fragment SEQ ID NO: 19562.
                                                                                                                                                                                                                                                                                BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990S - 0126264
990S - 0126768
990S - 0128746
990S - 0128834
990S - 0128834
990S - 0130874
990S - 0130804
990S - 0130804
990S - 013080
990S - 0131449
990S - 0131448
990S - 0132487
990S - 0132487
990S - 0132487
990S - 0134218
990S - 0134370
990S - 0136021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0121825.
99US-0123180.
99US-0123548.
99US-0125788.
                                                                                                                                                                                                                                                                              AAC38037 standard; DNA; 976
                                                                                                                                                                                                                                                                                                                                                     17-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana
                                                                                                                                                   caagegg 687
                                                                                                                                                                                      667 caacagg 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-APR-1999;
16-APR-1999;
19-APR-1999;
21-APR-1999;
23-APR-1999;
28-APR-1999;
30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-MAY-1999
                                                                                                                                                                                                                                                                                                                   AAC38037;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J6-MAY-1
                                                                                                                                                                                                                                            13
                                            547
                                                                                                                                                   681
                                                                                                                                                                                                                                            RESULT 1
                                        a
                                                                                                                                                                                                                                                                                                                 A PART OF THE PROPERTY OF THE 
                                                                                                               9
                                                                                                                                                 ò
                                                                                                                                                                                    a
                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    261 gtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtggcc 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cacccagcetgccaaaaggccagagccgtggctcccaaacccagcagccggggggg 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           catgaccttcggcctggctgcgccgtggagatgatgcacatggcagcacccgcta 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      egacatggaccgetttggegtggtetteegegecageeegegecagteegaegteatgat 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    googgagoogogotacgtggtctccatggggagctgcgccaacggaggaggctactacca 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 21; Length 937;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 251.8; DB 2
Pred. No. 2.4e-46;
0; Mismatches 147
 99US-0153070.
99US-0153758.
99US-0154018.
99US-0154039.
                                                                                                                                                                                               9908 - 0.157753

9908 - 0.157753

9908 - 0.1588232

9908 - 0.158232

9908 - 0.158233

9908 - 0.159294

9908 - 0.159331

9908 - 0.159331

9908 - 0.159331

9908 - 0.159331

9908 - 0.159331

9908 - 0.159331

9908 - 0.159638

9908 - 0.159638

9908 - 0.159638

9908 - 0.159638

9908 - 0.159638

9908 - 0.160981

9908 - 0.160981

9908 - 0.160981

9908 - 0.161404

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406

9908 - 0.161406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30.68;
                                                                                        9908-0155139.
9908-0155486.
9908-0155659.
                                                                                                                                              99US-0156458.
99US-0156596.
99US-0157117.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
10-SEP-1999;
13-SEP-1999;
15-SEP-1999;
20-SEP-1999;
20-SEP-1999;
23-SEP-1999;
24-SEP-1999;
                                                                                                                                                                                                                                                                                                       13-0CT-1999;
13-0CT-1999;
14-0CT-1999;
14-0CT-1999;
14-0CT-1999;
14-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-007-1999)
25-007-1999)
25-007-1999)
26-007-1999)
26-007-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-0CT-1999;
28-0CT-1999;
28-0CT-1999;
29-0CT-1999;
                                                                                                                                              28-SEP-1999;
29-SEP-1999;
04-OCT-1999;
                                                                                                                                                                                                                                                     08-OCT-1999;
12-OCT-1999;
13-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                      18-0CT-1999;
21-0CT-1999;
21-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1-0CT-1999;
1-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-OCT-1999;
22-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Sim
Matches 340;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   487
```

90 OY OD

Db Db

δ

Ω

à

33 38 38 38 38 38 38 38 38 38 38 38 38 3	33946 33997 33997 33997 33997 33997 3397 339	• 444444444444444444444444444444444444	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
0. sn66	00000000000000000000000000000000000000	99998-011 99908-011 99908-011 99908-011 99908-011 99908-011 99908-011 99908-011 99908-011	00-sh66666666666666666666666666666666666
	Ტ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲ ₲	00000000000000000000000000000000000000	, , , , , , , , , , , , , , , , , , ,
2 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00	33.700L 34.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700L 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.700C 37.
*************	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	**************************************	. K K K K K K K K K K K K K K K K K K K

90S - 0147416 90S - 0147493 90S - 0147493 90S - 01481213 90S - 0148311 90S - 0148341 90S - 0149368 90S - 0149472 90S - 0149929 90S - 0149929	9905-0149930. 9905-0150566. 9905-0150566. 9905-0151065. 9905-0151066. 9905-0151303. 9905-0151303. 9905-0151303. 9905-0151303. 9905-015568. 9905-015568. 9905-015568.	905.0157869 905.0158029 905.0158029 905.0159294 905.0159295 905.0159295 905.0159330 905.0159330 905.0159330 905.0159330 905.0159330 905.0159330	90S-0160814 90S-0160815 90S-0160981 90S-0160981 90S-0161405 90S-0161405 90S-0161361 90S-0161361 90S-0161361 90S-0161361 90S-0161361 90S-0161361
6-AUG-1999 9-AUG-1999 0-AUG-1999 0-AUG-1999 3-AUG-1999 3-AUG-1999 8-AUG-1999 0-AUG-1999 0-AUG-1999 0-AUG-1999	23.Add 1999 26.Add 1999 26.Add 1999 27.Add 1999 27.Add 1999 27.Add 1999 30.Add 1999 30.Add 1999 31.SEP 1999 31.SEP 1999 32.SEP 1999 33.SEP 1999 33.SEP 1999 34.SEP 1999 25.SEP 1999 26.SEP 1999 27.SEP 1999 28.SEP 1999 28.SEP 1999 29.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999 20.SEP 1999	6 - 0.0.T - 1999 8 - 0.0.T - 1999 8 - 0.0.T - 1999 8 - 0.0.T - 1999 9 - 0.0.T - 1999 10 - 0.0.T - 1999 11 - 0.0.T - 1999 11 - 0.0.T - 1999 12 - 0.0.T - 1999 13 - 0.0.T - 1999 14 - 0.0.T - 1999 15 - 0.0.T - 1999 16 - 0.0.T - 1999 17 - 0.0.T - 1999 18 - 0.0.T - 1999 19 - 0.0.T - 1999 19 - 0.0.T - 1999 10 - 0.0.T - 1999	11-001-1999 12-001-1999 13-001-1999 13-001-1999 13-001-1999 13-001-1999 13-001-1999 13-001-1999 13-001-1999
** * * * * * * * * * * * * * * * * * * *	K K K K K K K K K K K K K K K K K K K	X X X X X X X X X X X X X X X X X X X	& & & & & & & & & & & & & & & & & & &

Query Match 30.6%; Score 251.8; DB 21; Length 976; Best Local Similarity 69.8%; Pred. No. 2.4e-46; Matches 340; Conservative 0; Mismatches 147; Indels 0; Gaps

```
990s - 0131449
990s - 0132048
990s - 0132485
990s - 0132485
990s - 0132487
990s - 0132487
990s - 0132487
990s - 0134219
990s - 01343219
990s - 01343219
990s - 01343219
990s - 0135629
990s - 0136021
990s - 0136021
990s - 0136021
990s - 0136021
                                                                                                                                                                                 990S-0138094
990S-0138540
990S-0138847.
990S-0139119.
990S-0139452.
                                                                                                                                                                                                                                              9905 - 0139456
9905 - 0139457
9905 - 0139459
9905 - 0139460
9905 - 0139461
9905 - 0139461
9905 - 0139463
9905 - 0139750
9905 - 0139750
9905 - 0139750
9905 - 0140353
9905 - 0140855
9905 - 0140855
9905 - 0141845
9905 - 0141845
9905 - 014286
9905 - 014286
9905 - 014286
9905 - 014286
9905 - 014286
                                                                                                                                                                                                                           99US-0139492.
99US-0139454.
99US-0139455.
                                                                                                                                                                                                                                                                                                                                                                                                                          990S - 0143542

990S - 0144085

990S - 0144085

990S - 0144085

990S - 0144335

990S - 0144333

990S - 0144333

990S - 0144335

990S - 0144335

990S - 0144335
99US-0130891
                   30-APR-1999;
04-MAY-1999;
05-MAY-1999;
                                                                                                                                  5-MAY-1999
                                                                                               MAY-19
MAY-19
                                                                                                                    MAY - 1
320
                                                         gccggagccgcgttacgtggtctccatggggagctgcgccaacggaggaggctactacca 560
                                                                                                                                                                        ctattcctactcggtggtggtgagggctgcgaccgcatcgtgcccgtggacatctacatccc 620
                                                                                                                                                                                                 cgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagat 500
           gtatgtggtggtcaagctggatgacctcgtcaactgggcccgccggagttctctgtgggcc
                                      cacccagoctgcccaaaaggccagagccgtggctcccaaacccagcagccggggcga
                                                                                                                                                    Hybridisation assay, genetic mapping, gene expression control, protein identification; signal transduction pathway, metabolic pathway, promoter; termination sequence; ss.
                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana DNA fragment SEQ ID NO: 33130.
                                                                                                                                                                                                                                                                           AAC41785 standard; DNA; 1266 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                      9905-0121825.
9905-0123180.
9905-0125788.
9905-0125788.
9905-0125785.
9905-0127465.
9905-0127465.
9905-0129714.
9905-0129714.
                                                                                                                                                                                                                                                                                                                                                                                                         25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana
                                                                                                                                                                                                                              caagegg 687
                                                                                                                                                                                                                                           669 caacagg 675
                                                                                                                                                                                                                                                                                                                                                                              EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-APR-1999;
21-APR-1999;
23-APR-1999;
                                                                                                                                                                                                                                                                                                         17-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                           06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                              05-MAR-1999
09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                   MAR-1999
                                                                                                                                                                                                                                                                                           AAC41785;
                189
                              261
                                                        321
                                                                       309
                                                                                     381
                                                                                                  369
                                                                                                                441
                                                                                                                              429
                                                                                                                                           501
                                                                                                                                                         68
                                                                                                                                                                        561
                                                                                                                                                                                     549
                                                                                                                                                                                                                              681
               g
                                          g
                             ŏ
                                                        ò
                                                                    엄
                                                                                   δy
                                                                                                  g
                                                                                                              οŽ
                                                                                                                             g
                                                                                                                                                        qq
                                                                                                                                           ŏ
                                                                                                                                                                      ò
                                                                                                                                                                                     셤
                                                                                                                                                                                                 δy
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                          g
```

```
99085 -01444884
99085 -01444884
99085 -014468814
99085 -014468814
99085 -01445089
99085 -01445089
99085 -01445089
99085 -01445089
99085 -014450818
99085 -014450818
99085 -014450818
99085 -014450818
99085 -014450818
99085 -014450818
99085 -014450818
99085 -014450818
99085 -014468117
99085 -014468117
99085 -014468117
99085 -014468117
99085 -014468117
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -01449175
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
99085 -0151086
                                                                                                                                                                                                                                                                                     26-JUL-1999;
27-JUL-1999;
27-JUL-1999;
28-JUL-1999;
02-AUG-1999;
02-AUG-1999;
03-AUG-1999;
04-AUG-1999;
05-AUG-1999;
06-AUG-1999;
06-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-AUG-1999
09-AUG-1999
10-AUG-1999
112-AUG-1999
113-AUG-1999
113-AUG-1999
115-AUG-1999
117-AUG-1999
117-AUG-1999
118-AUG-1999
118-AUG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-SEP-1999;
10-SEP-1999;
13-SEP-1999;
15-SEP-1999;
16-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23.5EP-1999
24.5EP-1999
29.5EP-1999
04-0CT-1999
06-0CT-1999
06-0CT-1999
06-0CT-1999
12-0CT-1999
13-0CT-1999
13-0CT-1999
```

```
440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261 gtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttctctgtggcc 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 cacccagcotgcccaaaaggccagagcogtggctcccaaaccccagcagccgggggg 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caccagacctggtcctccttcgacctccctcctcctggtctctctaaagcggccga 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cgacatgaccgctttggcgtggtcttccgcgccagcccgcgccagtccgacgtcatgat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctattcctactcggtggtgagggctgcggacgcatcgtgccogtggacatctacatccc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aggetgeccacetaeggecgaggecetgetetaeggeateetgeagetgeagaggaagat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gccggagccgcgctacgtggtctccatggggagctgcgccaacggaggaggctactacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              936 ggggtgcccaccaaccgctgaggctttgctctatggactactccagcttcagaagaaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 237.8; DB 21; Length
Pred. No. 2.8e-43;
0; Mismatches 147; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAA81468 standard; DNA; 72750 BP
9905 - 0159638 - 9905 - 0159638 - 9905 - 0160551 - 0905 - 0160767 - 9905 - 0160767 - 9905 - 016098 - 9905 - 0161926 - 9905 - 0161926 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 9905 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 0161928 - 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-DEC-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 69.4 Matches 338; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caacagg 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caagegg 687
14 OCT - 1999;
18 OCT - 1999;
21 OCT - 1999;
21 OCT - 1999;
22 OCT - 1999;
22 OCT - 1999;
25 OCT - 1999;
25 OCT - 1999;
26 OCT - 1999;
26 OCT - 1999;
27 OCT - 1999;
28 OCT - 1999;
28 OCT - 1999;
29 OCT - 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA81468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAA81468/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΩÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΟŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ōΛ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οÿ
```

meningitidis partial DNA sequence gnm_16 SEQ ID NO:16

ï

```
The present invention describes methods of obtaining immunogenic proteins from Neisseria genomic sequences. AAA81453 to AAA82414 represent specifically claimed Neisseria meningitidis genomic DNA sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent AAA81260 to AAA81321 represent PCR primers used in the solation of MAA81304 to AAA81321 represent PCR primers used in the isolation of Neisseria meningitidis DNA sequences; and AAA81322 to AAA81452 represent Neisseria meningitidis MenB polynuclectide ORF sequences, which are all used in the exemplification of the present invention. The nucleic acid sequences, protein sequences, and antibodies against them, can be used as a medicament (or in the manufacture of a composition can be used as a medicament (or in the manufacture of a medicament) for treating, preventing or diagnosing infection due to Neisserial bacteria. For example, some of the identified proteins could be components of vaccines against Maningococcus B; against all serotypes; from the bacterium will also facilitate production of biological probes, Meningococcus B vaccines have failed mainly due to antigen tolerance. Multivalent vaccines have failed mainly due to antigen tolerance. Whitivalent vaccines have failed mainly due to antigen tolerance exposed proteins that may be presumed targets for the immune system and the may are an antiable or at least more conserved than
Neisseria meningitidis, Neisseria gonorrheae, genome; immunogenic;
antigen; vaccine; diagnosis; infection; antibacterial; identification;
Meningococcus B; MenB; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Isolated nucleotide sequences of Neisseria meningitidis which can be used in the diagnosis and treatment of N. meningitidis infection and other Neisserial infections, for example, N.gonorihoea
                                                                                                                                                                                                                                                                                                                                    Tettelin H, Venter JC;
Ratti G, Scarselli M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 7; Page 406-428; 1760pp; English
                                                                                                                                                                                                                                                                                                                                    Peterson J,
C, Mora M,
                                                                                                                                                                                            99WO-US23573.
                                                                                                                                                                                                                                 98US-0103794
99US-0132068
                                                                                                                                                                                                                                                                                                                                                    Galeotti C,
                                                                             Neisseria meningitidis
                                                                                                                                                                                                                                                                                                                                Hickey E,
                                                                                                                                                                                                                                                                                                                                                                       Pizza M;
                                                                                                                                                                                                                                                                                           (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-318079/27
                                                                                                                  WO200022430-A2
                                                                                                                                                                                                                                                                                                                                                    ``
                                                                                                                                                                                            08-OCT-1999;
                                                                                                                                                                                                                               09-OCT-1998;
30-APR-1999;
                                                                                                                                                       20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                       Rappuoli R,
                                                                                                                                                                                                                                                                                                                                Frazer CM,
                                                                                                                                                                                                                                                                                                                                                      Masignani
```

; 0 53747 272 ccaagetggatgacctcgtcaactgggcccgccgggagttctctgtggcccatgaccttcg 331 332 goctggcctgctgcgccgtggagatgatgcacatggcagcacccogctacgacatggacc 391 392 gettiggegiggtetteegegeeageeegeeagteegaegteegaegteategiggeeggea 451 Gaps 53866 CCAGCGCGGATACGGTGCTGAACTATAGCGTACCGGTTCGTTGTGGCCGGTTACTTTCG 53806 GCTTGGCCTGCTGCGCGTGGAATGATGCACGCGGGTATGGCGCGTTACGACCTTGACC Length 72750; ö 25.3%; Score 208.6; DB 21; Length 68.9%; Pred. No. 1.2e-36; Ive 0; Mismatches 129; Indels Conservative Query Match Best Local Similarity Matches 286; Conserv g g g ò δŽ δλ

Sequence 72750 BP; 17518 A; 19945 C; 18810 G; 16477 T; 0 other;

other more variable regions.

```
53686 GGCTCACCAATAAAATGGGGCCGGCCGGCCGGGGTGTACGACCAGCTCGCCGAGCCGC 53627
                                                                                                 452 cactcaccaacaagatggccccagcgcttcgcaaggtctacgaccagatgccggagccgc 511
                                                                                                                                                                                                                            572 cggtggtgagggctgcgaccgcatcgtgcccgtggacatctacatcccaggctgcccac
                                                                    gctacqtggtctccatggggagctgcgccaacggaggaggctactaccactattcctact
                                                                                                                                                                                                        632 ctacggccgaggccctgctctacggcatcctgcagctgcagaggaagatcaagcg 686
                                                                  512
                               g
                                                                                                                                                                                                                                        g
                                                                    ŏ
                                                                                             Dp
                                                                                                                                    ò
                                                                                                                                                                     a
                                                                                                                                                                                                        ŏ
```

Search completed: February 12, 2002, 17:22:05 Job time: 1620 sec

Scarlato V;

```
Human appiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 774)

National Institutes of Health, Mammalian Gene Collection (MGC)

National Institutes of Health, Mammalian Gene Collection (MGC)

Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Contact: Robert Strausbe
                                                                                                                            602403406
60140565
601870924
602972896
602947659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      602944329
601150009
601059750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2822901.5
602999309
601058927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        602119401
602317585
                                                                                                                                                                                                                                                                                      602998909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW249421 2819581.5
BF079568 230206 MA
BE235152 142504 MA
AL558939 AL558939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        602150934
                                                                                                                                                                                                                                                                                                                                                                                                                   602274355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   602458936
                                                                                                                                                                                                                                                                                                                                                               AL524830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG706832 774 bp mRNA EST 07-MAY-2001
602671984F1 NIH_MGC_96 Homo sapiens cDNA clone IMAGE:4794669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BI195080 6
BE312539 6
BE539026 6
                                                                                                                                                                                                                                                                                                                                                                                                                                      AW732049
BE563290
AW245825
BI333809
BE537419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG395768
BF670077
                                                                                                                                                                                                                                                                                                                                                                                                                   BG024362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG116499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. 774
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4794669"
/clone=lib="N'HH_MGC_96"
/tissue_type="hypothalamus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG116499
                                                                                                      BF342354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BG706832
BG706832.1 GI:13982569
     human.
6648.2
6647.2
647.2
647.2
642.8
6629.2
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.6
6627.
                                                                                                                                                                                                                                                                                                                                                                                     534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00

534.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
BG706832
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
     (without alignments)
7488.917 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG706832 602671984
BG479937 602527493
AL580649 AL580649
BE74266 601591551
BG48103 602519937
BG488658 602534588
BILL6730 60286416
BG765790 602738979
BF796373 601269415
BF796373 601269415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                       ; Search time 1182.35 Seconds
                                                                                                                                                                                                                                                                                                                               cggctcgagcggctcgagcg.......89ggcaaaaaaaaaaa 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           11351937 segs, 5372889281 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                       February 12, 2002, 16:53:45
                                                                                                                       nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG706832
BG479937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL580649
BE794266
BG491103
BG488658
BI116730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG765478
BF968344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE795373
BG395342
                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_gss_rod:*
em_gss_vrt:*
em_gss_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_htc:*

9b_est2:*

9b_est2:*

9b_htc:*

9b_gss:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_gss_hum:*
em_gss_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_gss_pln:*
em_gss_pro:*
                                                                                                                                                                                                                                                                 US-09-525-867-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_esthum:*
em_estin:*
em_estpl:*
em_estpl:*
em_estps:*
em_estro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
```

715.8 706.8 6999.8 692.8 6692.4 6671.8 6671.8 652.6 652.6

No.

Result

DB seq ]

Minimum I Maximum I

Database

Perfect score:

ı

OM nucleic

Run on:

Scoring table:

Searched:

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
  LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                      Source
                                                                          ORGANISM
                                                                                                                    AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               312
                                 ACCESSION
                                                                                                           REFERENCE
                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                     COMMENT
                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                        (gtcgag
                                                                                                                                                                          3
     /note="Organ: brain; Vector: pBluescriptk (modified pBluescript KS+); Site_1: BamHT: Site_2: Salr_xhoɪ (gtcga ); Oligo-dr primed using primer 5-TTTTTTTTTTTTTTTTTTTTTTVN-3', size-selected for average insert size 2.3 kb and normalized to ROT 5. This is a primary library enriched for full-length clones and constructed using the cap-trapper method (Carninci, in preparation). Library constitutes by M. Brownstein (NIMH/NHGRI, National Institutes of Health). Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                346
                                                                                                                                                                                                                                                                                                                                                                                                                                                        goggetteeggateettggtetgegeteeagegtgggeeeggetgtgeaggeaegaggtg 166
                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                  406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          646
                                                                                                                                                                                           acctcagaggttgtctgaaggccgaggccaagatggcggtgctgtcagctcctggcctgc 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   717
                                                                                                                                                                          Gaps
                                                                                                                                                                                                                   9
                                                                                                                                                                                                               1 AGCGGAGAGGTTGTCTGAAGGCCGAGGCCAAGATGGCGGTGCTGTCAGCTCCTGGCCTGC
                                                                                                                                                                                                                                                   GCGGCTTCCGGATCCTTGGTCTACGCTCCAGCGTGGGCCCCGGCTGTGCAGGCACGAGGTG
                                                                                                                                                                                                                                                                                                                                         cogtggagatgatacatggcagcaccccgctacgacatggaccgctttggcgtggtct
                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGTGGAGATGATGCACATGGCAGCACCCAGCTACGACATGGACCGCTTTGGCGTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tggggagctgcgccaacggaggaggctactaccactattcctactcggtggtgggggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgctctacggcatcctgcagctgcagaggaagatcaagcgggagcggaggctgcagatct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggtaccgcaggtagcgccgccgccgccgccgccgagagcctgtcgccgtcctgtccccagc
                                                                                                                                                                                                                                                                                                                           gagccgtggctcccaaacccagcagccggggcgagtatgtggtggccaagctggatgacc
                                                                                                                                                                                                                                                                                                                                                                       tggccccagcgcttcgcaaggtctacgaccagatgccggagccgcgctacgtggtctcca
                                                                                                                                                                         ω
• ·
                                                                                                                                                   Length 774;
                                                                                                                                                                         Indels
                                                                                                                                                    DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctgcttgtgtcccgtgaggttgtcaataaacctgccctcgg 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                  Score 715.8; DB 11
Pred, No. 1.4e-128;
0; Mismatches 12;
/lab_host="DH10B
                                                                                                                                                  86.9%;
98.0%;
                                                                                                                                                                        Conservative
                                                                                                                                                  Query Match
Best Local Similarity
Matches 746; Conserv
                                                                                                       132
                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                           47
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                     107
                                                                                                                                                                                                                                                                                                                          227
                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   647
                                                                                                                                                                                                                                                                                                                                                                    287
                                                                                                                                                                                                                                                                                                                                                                                                                347
                                                                                                                                                                                                                                                                                                                                                                                                                                                         407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167
                                                                                                                                                                                           à
                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                    P
                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                        Pp
                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

RESULT BG479937

```
/tissue_type="fortionarctinoma"
/fissue_type="fortionarctinoma"
/nab_host="DH10B (phage-resistant)"
/nate="lorgan: placents; Vector: port); Site_1: XhoI;
Site_2: EooRi, CobA made by oligo-dT priming.
Directionally cloned into EooRi/XhoI sites using the
following $' adaptor: GGCAGGAG(0). Size=selected >500bp
for average insert size 1.8kb. Library constructed by
Ling Hong in the laboratory of Gerald M. Rubin (University
of California, Berkeley) using ZaPr-CDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)."
281 c 261 g 141 t lothers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ë
                                                                                                                                                                                                             Euteleostomi;
                          ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleoston Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 836) MSIH-MSC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   рe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73 gocaaqatggcggtgctgtcagctcctggcctgcgcggcttccggatccttggtctgcgc 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ccggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttc 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 TCTGTGGCCCATGACCTTCGGCCTGGCGTGCTGCGCGTGGAGATGATGCACATGGCAGC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
BG479937 836 bp mRNA EST 21-MAR-2001
602527493F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:4651103
                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
cDNA Library Preparation: Ling Hong/Rubin Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Incyte Genomics, Inc.
clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tctgtgggcccatgaccttcggcctggcctgctgcgccgtggaaatgatgcacatggcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 CCGGGCGAGTATGTGGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GCCAAGATGGCGGTGCTGTCAGCTCCTGGCCTGCGCGCTTCCGGATCCTTGGTCTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cccaagcagcacccagcctgccaaaggccagagccgtggctcccaaacccagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .,
Έ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       85.8%; Score 706.8; DB 11; Length 836;
larity 98.5%; Pred. No. 7.5e-127;
Conservative 0; Mismatches 8; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLCM1433 row: i column: 24
High quality sequence stop: 751.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:4651103"
/clone_lib="NIH_MGC_21"
                                                                        BG479937
BG479937.1 GI:13412216
                                                                                                                                                                                                                                                                                                                                Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.,836
                                                   mRNA sequence.
                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        152
                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

;	Matches	Qy 80 tggcggtgctgt	19	OY 140 tgggcccggctg	200	139		Db 199 AGTATGTGGTGG	Db 259 CCATGACCTTCG		Db 319 ACGACATGGACC		QY 500 tgccggagccgc	DD 438 IGCCGGAGCCGC	Oy 560 actattcctact	Db 498 ACTATICCIACT	Oy 620 caggotgoccac	Qy 680 tcaagcgggagc	Db 618 TCAAGCGGGAGO		678	47 600 gccctcggggc 8		BE794266	NOILI	ACCESSION BE794266.1	KEYWORDS EST. SOURCE human. ORGANISM Homo sabie		RS	TITLE National II JOURNAL Unpublishe COMMENT CONTACT: R	Lmail: cga
	432 cytcatgatcytgygccygcacactcaccaacagatygccccaycycttcycaagytcta 4	Db 361 CGTCATGATGGCGGCCGGCACACTCACCAAGATGGCCCCCAGCGCTTCGCAAGGTCTA 420	492 ogaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggagg	DD 421 CGACCAGAIGCCGGGGTACGTGGTCTCCATGGGGAGCTGCGCCAACGGAGGAGG 480 Qy 552 ctactaccactattcctactcgqtqqtqaqqqqctqcqaccqcatcqtgccqtqqaqqt 611	481 CIACTACCACIATICTACTCGGIGGIGAGGGCTGCGACCGCATCGTGCCCGTGGACAT	612 ctacatoccaggctgcccacctacggccgaggccttgctctacggcatcctgcagctgca	541 CTACATCCCAGGCTGCCCACCTACGGCCGAGGCCCTGCTCTACGGCATCCTGCAGCTGCA	Oy 6/2 gaggaagatcaagcggaagcggagcggagctgcgatctggtaccgcaggtagcgccgccgc 731		661	Oy 791 aataaaccrtgocctcgggcaaaaaaaaaaa 824 Db 721 ACTAAACCTGGCTCGGGCGCAAAAAAA 755	,	EOG	DOCUS ALDSUGAY /99 DP MKNA EST 16-FEB-2001 DEFINITION AL580649 LTI_NFLO08_TC2 Homo sapiens CDNA clone CSODJ007KO20 5 PTIME, MRNA Sequence.		KEYWORDS EST. SOURCE human.	_	REFERENCE 1 (bases 1 to 799) AUTHORS LI,W.B., Gruber,C., Jessee,J. and Polayes,D. TITLE Full-length cDNA libraries and normalization	JOURNAL Unpublished (2001) COMMENT Contact: Genoscope	Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - France	Email	Source 1	/clone="CSODJ0072020" /clone="CSODJ0072020" /clone="Lb="LTI_NFL006_TC2"	/sex="mate" /tissue_type="T cells from T cell leukemia" //orto="from tools from tools fr	// // // // // // // // // // // // //	cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by	Life Technologies, Contact : Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Marvland 20850, USA Fax : (1) 301 610 8371	Email: fliang@lifetech.com URL: http://fullangflifetech.com.	BASE COUNT 156 a 264 c 235 g 140 t 4 others	Query Match 85.2%; Score 702.4; DB 10; Length 799;	

```
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .ens
1. Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
; 1 to 879)
                                                                                                    gggcctggctgctgcgcgtggagatgatgcacatggcaccccgct 379
                                                                                                                                                                                                                                acactcaccaacaagatggccccagggtttggcaaggtctacgaccaga 499
                                                                                                                                                                                                                                                                                                                    toggtggtgagggctgcgaccgcatcgtgcccgtggacatctacatcc 619
                                                                                                                                                                                                                                                                                                                                                                                                                                               9tgcaggcacgaggtgtccatcagagcgtggccaccgatggcccaagca 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              879 bp mRNA EST 20-SEP-2000 .FI NIH_MGC_7.Homo sapiens cDNA clone IMAGE:3945589 5'
 1; Gaps
9; Indels
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GI:10215464
 ervative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
```

```
125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901108
                                                                                                                                                                                                 S
                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                             718
                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                              RESULT
BG491103
                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                            LOCUS
                          q
                                                             à
                                                                                     g
                                                                                                                      24
                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  · Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                         /db_xref="taxon:9606"
/db_xref="taxon:9606"
/dbe="Ixaxon:9606"
/clone="IxAxGE:9945589"
/clone="IxAxGE:9945589"
/clone="IxAxGE:9945589"
/clone="Lipe="NGG:"
/tissue_type="small cell carcinoma"
/cell_line="MGG:"
/dab_host="DH10B (phage-resistant)"
/note="Organ: lung; Vector: pOTB7; Site_1: XhoI: Site_2: EcoR1; cDNA made by oligo-dT priming. Directionally cloned into EcoR1/XhoI sites using the following 5' adaptor: GGCACGAGG: Size-selected >5500pp for average insert size 1:8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of Callifornia, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3
       CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incytte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov Plate: LLCM804 row: e column: 14
High quality sequence stop: 773.

Location/Qualifiers

1. .879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tgtctgaaggccgaggccaagatggcggtgctagctcatggcctggcctgcgggcttccgg 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atcettggtetgegetecagegtgggeeeggetgtgeaggeaegaggtgtecateagage 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cogogocagtcogacgtcatgatcgtggcoggcacactcaccaacaagatggcoccagcg 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9t9cccgtggacatctacatcccaggctgcccacctacggccgaggccctgctctacggc 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCCTTGGTCTGCGCTCCAGCGTGGGCCTGGCTGTGCAGGCACGAGGTGTCCATCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cccaaacccagcagccggggcgagtatgtggtggccaagctggacctcgtcaactgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgcacatggcagcacccgctacgacatggaccgctttggcgtggtcttccgcgccagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 AIGCACAIGGCAGCACCCCGCTACGACAIGGACCGTTIGCGGGGGTTTCGCGGGCATCCGCGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGCGCCAGTCCGACGTCATGATCGTGGCCGGCACACTCCACCAACAAGATGGCCCCAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gccaacggaggaggctactaccactattcctactcggtggtgaggggctgcgaccgcatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gocogooggagttototgtgggcccatgaccttcggcctggctgcggcgtggagatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 879;
                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match 84.9%, Score 699.8; DB 11; Length Best Local Similarity 96.2%; Pred. No. 1.7e-125; Matches 738; Conservative 0; Mismatches 27; Indels
issue Procurement: DCTD/DTP
                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298
                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
```

```
/note="Organ: lung; Vector: pOTB7; Site_1: XhoI; Site_2: ECORI; CDNA made by oligo-dT priming. Directionally cloned thro BCORIX/AhoI sites using the following 5, adaptor: GGCAGGAG(G). Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Burkeley) using ZAP-CDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies). Note: this is a NIH MGC Library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata: Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 738)
1 (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T38 bp mRNA EST 27-MAR-2001 (602519937F1 NIF_MGC_18 Homo sapiens cDNA clone IMAGE:4638441 5', mRNA sequence. BG491103.1 GI:13452615 EST. EST. D. MAGE:4638441 EST. D. MAGE:4638441 BG491103.1 GI:13452615 EST. D. MAGE:4601
                                                                       660 TAGGGCGCGCGGCG-CGGGGCCGGAGCCTGTCGCCTGTCCCCCCAGCTGCTTGTGTCC 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             рe
                                                                                                                                                                                      tagogoogoogoogoogoogagootgtogoogtootgtocoagootgottgtgto 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gccaagatggcggtgctgtcagctcctggcctgcgggttccggatccttggtctgcgc 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcagc 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA Library Preparation. Ling Hong/Rubin Laboratory cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyt Genomics, Inc. Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: Plate: LLCM1400 row: j column: 10 Plate: LLCM1400 row: j column: 10 High quality sequence stop: 738.

1. 738
658 atcctgcagctgcagaggaaggaagatcaagcgggagcggaggctgcagatctggtaccgcagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GCCAAGATGGCGGTGCTGTCAGCTCCTGGCCTGCGCGGCTTCCGGATCCTTGGTCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 11; .Length 738;
                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="InAGE:4638441"
/clone=Inb="NIH_MGC_H"
/tissue_type="large cell carcinoma"
/lab_host="DHIOB (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 692.8; DB 11
Pred. No. 3.8e-124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NIH_MGC Library."
252 c 235 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84.1%;
98.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 98.5
Matches 731; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

S

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
BI116730
                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                     ΟŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                           Οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΫ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 695)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)

Email: cgapbs-r@mail.nih.gov
Tissue Procuement: DCTP/DTP/Gazdar

CONT ALIbrary Preparation: Ling Hong/Rubin Laboratory

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

CLOA Gistribution: MGC Clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

High quality sequence stop: 691.

        BG488658
        695 bp
        mRNA
        EST
        27-MAR-2001

        602544588F1 NIH_MGC_18 Homo sapiens cDNA clone IMAGE:4662381 5',
        mRNA sequence.

        BG488658
        GI:13450165

                                    312
                                                                                                                                  300
                                                                                                                                                                   492
                                                                                                                                                                                         420
                                                                                                                                                                                                            gaccagatgccggagccgctacgtggtctccatggggagctgcgccaacggagggg 552
                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                              aggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgc 732
                                                                                                                                                                                                                                                                                                                                                                                          cgccgccggagcctgtcgccgtcctgtccccagcctgcttgtgtcccgtgaggttgtcaa 792
cggggcgagtatgtggtggccaagctggatcatcgtcaactgggcccgccggagttct
                                              cccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcggccagtccgac
                                                                                                                                                                   gtcatgatcgtggccggcacactcaccaacaagatggccccagcgcttcgcaaggtctac
                                                                                                                                                                                                                                                                                                 tacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctgcag
                                                                                                                                                                                                                                                                                                                                                                                                                                   taaacctgccctcgggcaaaaa 814
                                                                                                                                                                                                                                                                                                                                                                                                                                                       717 TAAACCTGCCTCGGGCAAAA 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
           121
                                                     181
                                                                                                 241
                                                                                                                     373
                                                                                                                                                                                                                                                                                                                                             673
                                                                                                                                                                                                                                                                                                                                                                  009
                                                                                                                                                                                                                                                                                                                                                                                        733
                                                                                                                                                                                                                                                                                                                                                                                                             657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
COMMENT
                                 253
                                                                           313
                                                                                                                                            301
                                                                                                                                                                 433
                                                                                                                                                                                                            493
                                                                                                                                                                                                                                                                                                 613
                                                                                                                                                                                                                                                                                                                                                                                                                                   793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT (BG48858)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                    g
                                                                                               g
                                                                                                                                        g
                                                                                                                                                                                   q
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                   δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                 ò
                                                                           ò
                                                                                                                     ò
                                                                                                                                                                \delta
                                                                                                                                                                                                          δý
                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                          δy
```

```
Adbursef="taxon:9606"

(clone="lk="taxon:9606"

(clone="lk="NIE_MOG_181"

(clone="lk="NIE_MOG_181"

(clone="lk="NIE_MOG_181"

(lab_host="DH10B (phage-resistant)"

(lab_host="OH10B (phage-resistant)"

(note="Organ: lung; Vector: porPs; Site_1: XhoI; Site_2: FooRI; CDNA made by oligo-dT priming. Directionally cloned into EcoRI/XhoI sites using the following 5' adaptor: GGAGAGG(). Library constructed by Ling Hong in the laboratory of Garald M. Rubin (University of California, Berkeley) using ZAP-CDNA synthesis kit (Stratagene) and Supersoribt II RT (Life Technologies). Note: this is a NIH_MGC Library.
                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 gaggccaagatggcggtgctgtcagctcctggcctgcgggcttccggatccttggtctg
                                                                                                                                                                                                                                                                                                                                                                                                                                             2 GAGGCCAAGATGGGGGTGCTGTCAGCTCCTGGCCTGCGCGGGCTTCCGGATCCTTGGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gacgicatgatcgiggccggcacactcaccaacaagatggccccagcgcttcgcaaggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           370 gcaccccgctacgacatggaccgctttggcgtggtcttccgcgccagcccgcgccagtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tacgaccagatgccggagccgctacgtggtctccatggggagctgcgccaacggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      422 TACGACCAGATGCCGGAGCCGCCTACGTGGTCTCCATGGGGAGCTGCGCCAACGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAGGAAGATCAAGCGGGAGCGGAGGCTGCAGATCTGGTACCGCAGGTGAGCGCCGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggctactaccactattcctactcggtggtgaggggctgcgaccgcatcgtgcccgtggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           610 atetacateceaggetgeceacetacggeegaggeeetgetetacggeateetgeagetg
                                                                                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                                                                                                                                                             Length 695;
                                                                                                                                                                                                                                                                                                                                                                                    1; Indels
                                                                                                                                                                                                                                                                                                                                         Query Match

84.0%; Score 692.4; DB 11;

Best Local Similarity 99.9%; Pred. No. 4.5e-124;

Matches 693; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     egecgecgecggageetgtegecgteetgteece 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCCGCCGCCGGAGCCTGTCGCCGTCCTGTCCCC
                                                                                                                                                                                                                                                                  114
```

```
465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                             ρý
                                                                                                                                                                   d
                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dry answer" Homo sapiens"

/dry aref="Laxon:9606"

/clone="INAGE:5017179"

/clone="INAGE:5017179"

/clone="INAGE:5017179"

/clone="INAGE:5017179"

/clone="InAGE:5017179"

/clone="InAGE:5017179"

/cell_line="NAGC_""

/cell_line="NAGC_"

                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. (bases 1 to 733)

NIH 'MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                     Tational includes of nearth, Manmaillan Sene Collection (MSC) Unpublished (1999)

Contact: Robert Strausberg, Ph.D.
Email: Gapper-remail.nih.gov

Iissue Procurement: DCTD/PDF

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov

Plate: LLCM1828 row: o column: 04

High quality: Sequence stop: 670.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62_TGTCCATCAGAGCGTGGCCACCGATGGCCCAGCAGCAGCAGCACCAGCCTGCCCTGCCTAAAGGC 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
     BI116730 733 bp mRNA EST 26-JUN-2001
602868116F1 NIH_MGC_7 Homo sapiens CDNA clone IMAGE:5017179 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cagagccgtggctcccaaacccagcagccggggcgagtatgtggtggccaagctggatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctcgtcaactgggcccgccggagttctctgtggcccatgaccttcggcctggcctgctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cgccgtggagatgatgcacatggcagcaccccgctacgacatggaccgctttggcgtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tgtccatcagagcgtggccaccgatggcccaagcagcacccagcctgccaaaggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cttocgcgccagcccagtccgacgtcatgatcgtggccggcacactcaccaacaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 682.4; DB 11; Length 733;
Pred. No. 3.9e-122;
0; Mismatches 16; Indels 1;
                                                     mRNA sequence.
BI116730
BI116730.1 GI:14567631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82.8%;
97.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130
                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Sim
Matches 703;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     302
                                                                                   ACCESSION
                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
EDW Homo sapiens

EDWARTYOLA: Metazoa: Chordata; Craniata; Vertebrata; Euteleostom1;

Mammanla; Eutherla: Primates; Catarrhin; Hominidae; Homo.

1 (bases 1 to 741)

National Institutes of Health, Mammalian Gene Collection (MGC)

National Institutes of Health, Mammalian Gene Collection (MGC)

Onpublished (1999)

N. Contact: Robert Strausberg, Ph.D.

Email: cgapbs-remail.nih.gov

Tissue Procurement: ATCC_COTD/DTP

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

Plate: LCM1741 row: g column: 05

High quality sequence stop: 739.

Location/Qualifiers

Ince //crainellensees/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="melanotic melanoma, high MDR (cell line)"
/tissue_type="melanotic melanoma," it about = "DHIOB (phage-resistant)"
/note="Organ: skin, Vector: pOTB7; Site_1: Xhol; Site_2:
ECORI; cDNA made by oligo-dT priming. Directionally cloned into ECORI/Xhol sites using the following 5' adaptor:
GGCGGGG(G). Size selected 500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M Rubin (University of California, Berkeley)
using ZAP-cDNA synthesis kit (Strategene) and Superscript Library. |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG765790 742 bp mRNA EST 15-MAY-2001
602739620F1 NIH_MGC_49 Homo saplens CDNA clone IMAGE:4869532 5',
mRNA sequence.
BG765790.1 GI:14076443
                   644
                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                     542 CCTGCTCTACGGCATCCTGCAGCTGCAGAGGAAGATCAAGCGGGAGCGGAGGCTGCAGAT 601
                                                                                                                                                                                                                                                                                                                                                                                                                                              gatggccccagcgcttcgcaaggtctacgaccagatgccggagccgcgctacgtggtctc
                                                                                                                                                                          ctgcgaccgcatcgtggccgtggacatctacatcccaggctgcccacctacggccgaggc
                                                                                                                                                                                                  118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:4869532"
/clone_lib="NIH_MGC_49"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         224 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                        585
                                                                                                                                                                                                                                                               645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
BG765790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
```

```
Library
                                                                                                                                                                                                                                                              188
                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                    Local
                                                                                          source
                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540 (
                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ.. qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . Q
                         ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homosapiens

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 813)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG765478 813 bp mRNA EST 15-MAY-2001
602738979F1 NIH_MGC_49 Homo sapiens CDNA clone IMAGE:4868923 5'
mRNA sequence.
BG766478 GI:14076131
                                                                                                                                                                        533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caggtagegecgecgecgecgecgecgagectgtegecgteetgteeceagectgettg 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    629
                                                                                                                                                                                                                    413
                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                  593
                                                                                                                                                                                                                                                                                                                                                                                            653
                                                                                                                                                                                                                                                                                                                                                                                                                541
                                            coggatecttggtetggetecagegtgggeeeggetgtgeaggeacgaggtgtecatea 173
                                                                                      gagogtggccaccgatggcccaagcagcacccagcctgccctgccaaaggccagagccgt 233
                                                                                                                                                     181
                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                             cagocogogocagtocgacgtcatgatogtggcoggcacactcaccaacaagatggcoco 473
                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                      ggeteceaaacecageageeggggggggtatgtggggecaagetggatgacetegteaa
                                                                                                                                                                                                                                                                        cggcatcctgcagctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGCATCCTGCAGCTGCAGAGGAAGAACAAGCGGGAGCGGGAGGCTGCAGATCTGGTACCG
                                                                                                                                                    GCCTCCCAAACCCAGCAGCCGGGGGGGGTATGTGGTGGCCAAGCTGGATGACCTCGTCAA
                                                                                                                                                                                                                    gatgatgcacatggcaccccgctacgacatggaccgctttggcgtggtcttccgcgc
                                                                                                                                                                                                                                                                                                       agegettegeaaggtetacgaceagatgeeggageegectaegtggteteeatgggggag
                                                                                                                                                                                                                                                                                                                                                  ctgcgccaacggaggaggactactaccactattcctactcggtggtgaggggctgcgaccg
                                                                                                                                                                                                                                                                                                                                                                                            categtgcccgtggacatetaeateccaggetgcccaecetaeggecgaggecetgeteta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGTAGCGCCGC - - GCCGCCGCGCGCGCGCCTGTCGCCGTCCTGTCCCCAGCCTGCTTG
                       7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: ATCC/CCTD/DTP
CDNA Library Preparation: Ling Hong/Rubin Laboratory
   Length
Score 677.8; DB 11;
Pred. No. 3e-121;
0; Mismatches 12;
82.3%;
98.0%;
Ouery Match
Best Local Similarity 98.0
Matches 697; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
BG765478
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                           114
                                                                                     174
                                                                                                                                                    122
                                                                                                                                                                                             182
                                                                                                                                                                                                                                      242
                                                                                                                                                                                                                                                                                                      474
                                                                                                                                                                                                                                                                                                                           362
                                                                                                                                                                                                                                                                                                                                                                    422
                                                                                                                                                                                                                                                                                                                                                                                                                482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           099
                                                                                                                              234
                                                                                                                                                                                                                                                           414
                                                                                                                                                                                                                                                                                 302
                                                                                                                                                                                                                                                                                                                                                 534
                                                                                                                                                                                                                                                                                                                                                                                                                                    654
                                                                                                                                                                                                                                                                                                                                                                                                                                                         543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      774
                                                                                                                                                                                                                  354
                                                                                                                                                                                                                                                                                                                                                                                          594
                                                                                                                                                                       294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                        qq
                                                                                                                                                                                         g
                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                     ŏ
                                                                                                                             ò
                                                                                                                                                 q
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                           òχ
                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                       ò
```

```
/tissue_type="melanotic melanoma, high MDR (cell line)"
/lab_host="DHIOB (phage-resistant)"
/note="Organ: skih; Vector: pOTBF; Site_1: XhoI; Site_2:
BCORI; cDNA made by oliqo-dr priming. Directionally cloned
into EcoRI/XhoI sites using the following 5' adaptor:
GGCACGAG(G). Size-selected >500bp for average insert size
I.8kb. Library constructed by Ling Hong in the laboratory
of Gerald M. Rubin (University of California, Berkeley)
using ZAP-CDNA synthesis kit (Stratagene) and Supersoript
II RT (Life Technologies). Note: this is a NIH_MGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    239
                                                  be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120 cettggtetgggeteeagegtgggeeeggetgtgeaggeaegaggtgteeateagagegt 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gegeegeegeegeegeegeeggageetgtegee-gteetgteeeeageetgettgtgtee 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can l
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLCM1739 row: m column: 20
High quality sequence step: 708.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 crigificiecerceaecereeecrieecrerecaecaecaecaecarcarcarcaaecer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cogocogaattetetgtggcccatgacettcggcctggcctgctgcgccgtggatgat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tegeaaggtetacgaccagatgeeggageegegetacgtggteteeatggggagetgeege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660 cctgcagctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccgcaggta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGCAGCTGCAGAGGAAGATCAAGCGGGAGCGGAGGCTGCAGAGTCTGGTACCGCAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggccaccgatggcccaagcacccagcctgcctgccaaaggccagagccgtggctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189 cceccegagricicierescecargacericescerescerececeresceresargar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gogocagicogacgicatigatogiggocagacacicaccaacaagaiggococagosit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309 GCGCCAGTCCGACGTCGTGGCCGGCACACTCACCAACAAGATGGCCCCAGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caacggaggaggctactaccactattcctactcggtggtgaggggctgcgaccgcatcgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
?i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 661.2; DB 11;
Pred. No. 4.6e-118;
0; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118 t
                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4868923"
/clone_lib="NIH_MGC_49"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tch 80.2%;
al Similarity 97.9%;
691; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   268
                                                                                                                                                                                  1. .813
```

```
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                           771
                                                                                                                                                                                                                                                                                 591
                                                                                                                                                                                                                                                                                                                                                                     598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                         531
                                                                                                                                                                                                                                                                                                                                         651
                                                                                                                                                                                                                                                                                                                                                                                                   711
                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
BE795373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                          οy
                                                                       g
                                                                                                                                qq
                                                                                                                                                               Š
                                                                                                                                                                                         Q
                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                               δŽ
                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                  οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9608"
/clone="InAdE:1357803"
/clone="Lib="NIH_MGC_84"
/tissue_type="adrenal cortex carcinoma, cell line"
/tashost="bill08 (phage-resistant)
/note="Organ: adrenal gland; Vector: pCMV-SPORT6; Site_1:
NotI; Site_2: SalI; Cloned unidirectionally; oligo-dr
primed. Average insert size 1.229 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library "
138 g 143 t.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                    Mammatiai Edulicitai Filmates) Catallillini, nomililadae, nomic.

NIH-MGC http://mgc.nci.nih.gov/.
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: capbs: "Famili.nih.gov
Tissue Procurement: Affail.nih.gov
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Prayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at:
http://image.llnl.gov m. column: 04
High quality Sequence stop: 704.
                                                                                                                                                                                                                                                Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrnini; Hominidae; Homo.
                                                                                                                                            BF968344 936 bp mRNA EST 22-JAN-2001
602269415Fl NIH_MGC_84 Homo sapiens cDNA clone IMAGE:4357803 5
cgtggctcccaaacccagcagccggggcgagtatgtgggggccaagctggatgacctcgt 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cttccggatccttggtctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtcca 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tcagagcgtggccaccgatggcccaagcagcacccagcctgccctgccaaaggccagagc 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291 caactgggcccgccggagttctctgtggcccatgaccttcggcctggcctgctgcgccgt 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGIGGCTCCCCAAACCCAGCAGCCGGGGGGGATAIGTGGTGGCCAAGCTGGATGACCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                           Score 652.6; DB 11;
Pred. No. 2.1e-116;
0; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                       BF968344.1 GI:12335559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79.2%;
95.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 95.5
38; Conservative
                                                                                                                                                                        mRNA sequence.
BF968344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Simples 738;
                                                                                                                                                                                                                      EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                          179
                                                                    699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
            609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                        ACCESSION
                                                                                                                                BF968344
                                                                                                                RESULT
              g
                                          ò
                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΩŊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
Email: Ggapbs remail.nih.gov
Tissue Procurement: DCTD/DTP
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: The Journal of Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov
Plate: LLCM807 row: f column: 01
High quality sequence stop: 736.
L.Osation/Qualifiers
L.Osation/Qualifiers
L.Osation/Qualifiers
L. 736
//organism="Homo sapiens"
//clone="IMAGE: 3346752"
//clone="IMAGE: 3346752"
//clone="IMAGE: Sanall cell carcinoma"
//cissue.type="snall cell carcinoma"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo. [ tobase 1 to 736)
NIF-WGC http://mgc.nci.nih.gov/.
National institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: lung; Vector: pOTB7; Site_1: XhoI; Site_2: EcoRI; cDNA made by oligo-dT priming. Directionally
411 egeceageceageceagtecegaegteatgategteggeeggeeacaeteaceaacaagatege 470
                                                                                                                                                                                                                                                                                                                                 gagetgegecaacggaggaggetactaceactattectacteggtggtgaggggetgega 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctacggcatcctgcagctgcagaggaagatcaagcgggagcggaggctgcagatctggta 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            657 CCGCAGGTAGCGCCG----CGCCGCGCGCGGAGCCTGTCGC--GTCTGTCCCCAGCCTGC 710
                                                                                                                                                301 GGAGATGATGCACATGGCAGCACCCGGTACGACATGGACCGCTTTGGCGTGGTCTTCCG 360
                                                                                                                                                                                                                                                                          361 CGCCAGCCGCGCCAGTCCGACGTCATGGTCGTGGCCGGCACACTCACCAACAAGATGGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481 GAGCTGCGCCAACGGAGGAGGCTACTACCACTATTCCTACTCGGTGGTGAGGGGCTGCGA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE795373 736 bp mRNA EST 20.5EP-2000 601582903F1 NIH_MGC_7 Homo sapiens cDNA clone IMAGE:3946752 5' BE795373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggagatgatgatgacacatggcagcaccccgctacgacatggaccgctttggcgtggtcttccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cogcatogtgcccgtggacatctacatcccaggctgcccacctacggcccgaggccctgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cell_line="MGC3"
/lab_host="DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE795373.1 GI:10216571
```

```
GI:13288790
 BG395342.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                        ORGANISM
                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 362
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE CC
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Óγ
                                                                                                                                                           Ŋ
cloned into EcoRI/XhoI sites using the following 5' adaptor: GGCAGGG(G). Size-selected >SODD for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies)." 244 c 240 g 125 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        792
                                                                                                                                                                                                                                                                                            252
                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                gtcatgatcqtggccgcacactcaccaacaagatggccccagcgcttcgcaaggtctac 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         612
                                                                                                                                                                                                                                                                                                                                                                                                                                                      cocegetacgacatggaccgetttggcgtggtettccgcgccageccgcgccagtecgae 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCATGATCGTGGCCGGCACACTCACCAACAAGATGGCCCCCAGCGCTTCGCAAGGTCTAC 420
                                                                                                                                                                                      gocaagatggcggtgctgtcagctcctggcctgcgcggcttccggatccttggtctgcgc 132
                                                                                                                                                                                                                                        tecagegtgggcccggctgtgcaggcacgaggtgtccatcagagcgtggccaccgatggc 192
                                                                                                                                                           Gaps
                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG395342 1002 bp mRNA EST 12-MAR-2001
602457879F1 NIH_MGC_16 Homo sapiens cDNA clone IMAGE:4580538
mRNA sequence.
                                                                                                                                                                                                                                                         657 GGGGGGGGGAGCTGTCGCCGTCCTGTCTGTGTGTCCCGTGAGGTTGTC-A
                                                                                                                                                                                                                                                                                             ccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaaacccagcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tacatcccaggctgcccacctacggccgaggccctgctctacggcatcctgcagctgcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 TACATCCCAGGCTGCCCACCTACGG-CGAGGCCCTGCTCTACGGCATCCTGCAGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aggaagatcaagcgggagcggaggctgcagatctggtaccgcaggtagcgccgccgccgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cgccgccggagcctgtcgccgtcctgtccccagcctgcttgtgtcccgtgaggttgtcaa
                                                                                                                                                                                                 CCAAGCACCCAGCCTGCCCTGCCAAAGGCCAGAGCCGTGGCTCCCAAACCCAGCAGC
                                                                                                                                                                                                                                                                                                                                                 cggggcgagtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaccagatgccggagccgcgctacgtggtctccatggggagctgcgccaacggaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tactaccactattcctactcggtggtggtggggctgcgaccgcatcgtgcccgtggacatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600 AGGAAGATCAAGCGGAGCGGAGGCTGCAGATCTGGTACCGCAGGTAG---CGCCGGCGC
                                                                                                                                                                                                                                                                                                                                                                         CGGGGCGAGTATGTGGGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                   ctgtggcccatgaccttcggcctggcctgctgcgccgtggagatgatgcacatggcagca
                                                                                                                                                           ..
                                                                                                                                Length 736;
                                                                                                                                                           Indels
                                                                                                                                Score 652.4; DB 11;
Pred. No. 2.3e-116;
0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAACCTGCCTCGGGAAAAAA 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         793 taaacctgccctcgggcaaaa 814
                                                                                                                               Query Match 79.2%;
Best Local Similarity 96.9%;
Matches 719; Conservative
                                                                                 ď
                                                                              127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                    73
                                                                                                                                                                                                                                        133
                                                                                                                                                                                                                                                                19
                                                                                                                                                                                                                                                                                          193
                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                253
                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                      373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     715
                                                                                                                                                                                                                                                                                                                                                                                                  313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG395342
                                                                                                                                                                                                                                                                P<sub>D</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                òγ
                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                      δ
                                                                                                                                                                                                                                        δ
```

```
// 1002
/ Organism="Homo sapiens"
/ Organism="Homo sapiens"
/ Organism="Homo sapiens"
/ Clone="INAGE:4580538"
/ Clone=lib="NIH_MGC_16"
/ Clone=lib="NIH_MGC_16"
/ Lissue_type="retinoblastoma"
/ Lab_host="DH10B (phage-resistant)"
/ Lab_host="DH10B (phage-resistant)"
/ Lab_host="DH10B (phage-resistant)"
/ Lab_host="DH10B" (phage-resistant)"
/ Lab_host="DH10B" (phage-resistant)"
/ Look="Organ: eye; Vector: poTB); Site_1: xho!; Site_2:
/ Look="Draw made by oligo-dT priming, Directionally
cloned into EcoRI/Xho! sites using the following 5'
adaptor: GGCAGGAGG). Library constructed by Ling Hong
in the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-CDNA synthesis Xit
(Stratagene) and Superscript II RT (Life Technologies).
Note: this is a NHL-MGC Library."
15 a 313 c 321 g 153 t
Entrayota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostoph; Eutheryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

Mathonal Lintlivites of Health, Mammalian Gene Collection (MGC)

Lunpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: capaphs-rémail.nih.gov

Tissue Procurement: ArC.

CDNA Library Preparation: Ling Hong/Rubin Laboratory

CON CON CONSORTIUM/LING LING LING

High quality Sequence stoop: 753.

High quality Sequence stoop: 753.
                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ottggtctgcgctccagcgtgggcccggctgtgcaggcacgaggtgtccatcagagcgtg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gecacegatggeceaageageacecageetgeeetgecaaaggecagageegtggeteee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cacatggcagcaccccgctacgacatggaccgctttggcgtggtcttccgcgccagcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              egocagtccgacgtcatgatcgtggccgcacactcaccaacaagatggccccagcgctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cgcaaggtetacgaccagatgccggagccgcgctacgtggtetecatggggagetgcgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 79.1%; Score 651.8; DB 11; Best Local Similarity 94.1%; Pred. No. 2.9e-116; Matches 722; Conservative 0; Mismatches 37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
```

4,

	Db   247 GCTGCGCCGTGGAGGTGATGCCGGCGCGCGCTGGAGGTGGAGGGTTTTTTGGGG   306     Qy   401 tggtcttccgcgccggccggtccgacgtccgacgacggtcactcac	Oy 521 totccatggggagctgcgcaacggaggagctactaccactattcctactcggtggtga 580 427 TCTCCATGGGGAGCAACGGAGGAGGAGCTACTACTACTCCTACTCGGTGGTGA 486 OY 581 ggggctgcgaccgcatcgtggacatctacatcccaggctgccacctacggccg 640	agatctggtaccgcaggtagcgccgccgccgccgccggcggcggccgtccgt	REFERENCE Adminators Extractes, Catarrhini; Hominidae, Homo.  AUTHORS NIH-MGC http://mgc.nci.nih.gov/.  TITLE National Institutes of Health, Mammalian Gene Collection (MGC) JOURNAL Unpublished (1999)  COMMENT Email: cgapbs-r@mail.nih.gov Fissue Procurement: ATCC CONA Library Preparation: Ling Hong/Rubin Laboratory CONA Library Preparation: Ling Hong/Rubin Laboratory CONA Library Arrayed by: The I.M.A.G.E. Consortium (LINL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be
	OY 778 ccgtgaggttgtcaataaacctgccctcgggcaaaaaaaa	ACCESSION BE733056.1 GI:10147048 KEYWORDS EST:  BUT33056.1 GI:10147048 KEYWORDS EST:  BUARATYOGA, METAZOA: Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  REFERENCE 1 (bases 1 to 711) AGTHEORS NIH-MGC http://mgc.nci.nih.gov/.  TITLE National Institutes of Health, Mammalian Gene Collection (MGC) JOURNAL Uppublished (1999)	Contact: Robert Strausberg, Ph.D.  Email: Capbs-remail nih.gov     Tissue Procurement: AFC     CDNA Library Preparation: Ling Hong/Rubin Laboratory     CDNA Library Preparation: Ling Hong/Rubin Laboratory     CDNA Library Preparation: Ling Hong/Rubin Laboratory     CDNA Library Preparation: Ling     CONSTRIBET OF CONSTRIBETION OF LING     CONSTRIBETION OF LING CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION OF LING     CONSTRIBETION     CONSTRIBE	Date of the state

```
657 AGGTAGCGCCG----CGCCGCGCGCGCGGAGCTGTCGCCGTCTGTCCCCCAGCTGCTTGTG 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 CCGGGCCAGTATGTGGTGGCCAAGCTGGATGACCTCGTCAACTGGGCCCGCCGGAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism-"Homo sapiens"
/db_xref="taxon:9606"
/db_mkdE:4584528"
/clone=lib="NHH.MGC:14"
/tissue_type="renal cell adenocarcinoma"
                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 645.6; DB 11;
Pred. No. 4.6e-115;
0; Mismatches 30;
                                                                                                                                                                                          BG419411
BG419411.1 GI:13325917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 78.3%;
Best Local Similarity 94.7%;
Matches 713; Conservative (
                                                                                                                                                                              mRNA sequence.
                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                                                                                            human
                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
                                                                                                             RESULT 1:
BG419411
                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                     COMMENT
     qq
                                    δ
                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>음</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                          /d_xref".taxon:9666".
/clone='INAGE:4891946"
/clone='INAGE:4891946"
/clone='INAGE:4891946"
/clone='Lype='neuroblastoma"
/lab_host="DH10B (phage-resistant)"
/lab_host="OH10B (phage-resistant)"
/lab_host="OH10B (phage-resistant)"
/lab_host="OH10B (phage-resistant)"
/lab_host="OH10B (phage-resistant)"
/lab_host="OH10B (phage-resistant)"
/lab_host="DH10B (phage-resistant) / Coned into EcoRI/XhoI sites using the following 5/
adaptor: GGACGAG(G). Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies).
// Note: this is a NHLMGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                     'n
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov Plate: LLCM1771 row: m column: 03 High quality sequence stop: 770.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115 oggatoottgggtetgogetecagegtgggeeeggetgtgeaggeaegaggtgtecateag 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55 ggttgtctgaaggecgaggecaagatggeggtgctgtcagctectggectgegeggcttc 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agogtggccaccgatggcccaagcacccagcctgcctgccaaaggccagagccgtg 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gctcccaaacccagcagccggggggggtatgtggtggccaaqctggatgacctcgtcaac 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tgcgccaacggaggaggtactactactactccggtggtgaggggctgcgaccgc 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               595 ategtgcccgtggacatctacatcccaggctgcccacctacggccgaggccctgctctac 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggcatcotgcagctgcagaggaagatcaagcgggagcggaggctgcagatctggtaccgc 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aggtagcgccgccgccgccgccgcggagcctgtcgccgtcctgtccccagcctgcttgt 774
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tgggcccgccggagttctctgtggcccatgaccttcggcctggctgctgcgccgtggag 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GGTTGTCTGAAGGCCGAGGC--AAGATGGGGTGCTGTCAGCTCCTGGCCTGCGCGGGCTTC 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCATCCTGCAGCTGCAGAGGAAGATCAAGCGGGAGCGGAGGCTGCTGCTGGTACCGC
                                                                                                                                                                                                                                                                                                                                                                                                  œ
                                                                                                                                                                                                                                                                                                                                                                  Score 647.2; DB 11; Length 788; Pred. No. 2.3e-115; 0; Mismatches 48; Indels 8;
                                                                              /organism="Homo sapiens"
                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 92.7%;
Matches 714; Conservative
                                                                                                                                                                                                                                                                                                      147
                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         715
                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

```
/lab_nost="Period" period peri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                              ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72 ggccaagatggcggtgctgtcagctcctggcctgcgggcttccggatccttggtctgcg 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252 cogggggggggtatgtggtggccaagctggatgacctcgtcaactgggcccgccggagttc 311
BG419411 910 bp mRNA EST 14-MAR-2001
602446102F1 NIH_MGC_14 Homo sapiens CDNA clone IMAGE:4584528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GGCCAAGATGGCGGTGCTGTCAGCTCCTGGCCTGCGGGGCTTCCGGATCCTTGGTCTGCG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I M.A.G.E. Consortium (LLNL) Day Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can lfound through the I.M.A.G.E. Consortium/LLNL at: http://image.lln.gov clumm: 01 High quality sequence stop: 702.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         192 cccaagcagcacccagcctgccctgccaaaggccagagccgtggctcccaaacccagcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryottu.

Mammalla: Butheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 910)

NH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (
Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov

Tissue Procurement: DGTD/DTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 11; Length 910;
```

```
792 ataaacctgccctcgggcaaaaaaaaaaaa 824
                                                  711
   g
         g
            ŏγ
               qq
                  δŻ
                     Q
                        δ
                          qq
                              ð
                                 g
                                    δ
                                       g
                                          ò
                                             qq
                                                à
```

Search completed: February 12, 2002, 17:41:38 Job time: 2873 sec

```
TITISES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9bv17 homo sapien
Q9dc70 mus musculu
Q9xxX drosophila
Q9xxX drosophila
Q9xaX5 drosophila
Q9xaX5 drosophila
Q9xB3 lupinus lut
Q9lky Jupinus lut
Q9lky Jupinus lut
Q9lky Jupinus lut
Q9lky yarrowia li
Q9tky yarrowia li
Q9tx7 yarrowia li
Q9tx1 xylella fas
Q9cx1 caulobacter
Q9xx1 ceisseria m
Q9x72 neisseria m
Q9x72 neisseria m
Q9xx0 tetrahymena
Q25851 helicobacte
Q91w6 helicobacte
Q91w6 helicobacte
                                                                                                                                                                                                                                                                    February 12, 2002, 20:40:50; Search time 56.27 Seconds (Without alignments) 553.688 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MAVLSAPGLRGFRILGLRSS.....ILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      473505 segs, 146272329 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09BV17
09BX5
09WX5
09WX5
09WX6
09PW6
09PW6
09PW6
09PW4
09WU7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_lont:*
sp_rodent:*
sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPTREMBL_17:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_lnvertebrate:*
6: sp_mammal:*
7: sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-525-867-1
1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11118
915.5
916.5
916.5
753.5
743
721.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
710.5
71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seguence:
                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Result
No.
```

Q9hjj8 thermoplasm Q9pm97 campylobact Q9f2w1 streptomyce Q9xaq5 streptomyce Q9hrm0 halobacteri	00000	ethanosar aeropyrum oenothera sulfolobus archaeoglo	074013 pyrococcus 09x0u1 thermotoga 059104 pyrococcus 059104 pyrococcus 059654 mechanosarc 09uyn6 pyrococcus 057936 mechanosocc P72317 rhodospiril 053627 mycobacteri
09HJJ8 09FM97 09F2W1 09XAQ5 09HRM0	091KY0 0910K0 098GW8 098679 098BT7	09P9G2 09YC23 09MTP4 09UX55 028446 09V0S7	074013 Q9X0U1 Q9Y0R6 Q9VR6 059654 Q9UYN6 Q57936 P72317
12221	18877881	,	001111110
149 167 232 184 235	2222 2225 2324 230	184 202 247 170 353	195 173 173 156 148 159
444 244 30 30 30 30 30 30		23333333333333333333333333333333333333	22225566 2222255 222255 2223 2223 2223 2
470.5 461.5 459 443	. ოოოс	1 NW H	301 295 283 272 272 244.5
222 232 243 243	2000000 200000000000000000000000000000	2 E E E E E E E E E E E E E E E E E E E	W W W & 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

## ALIGNMENTS

. 0

```
Homo sapiens (Human).
Eukaryota, Metazoa, Chordata,
Mammalia, Eutheria, Primates,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                         NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9VXK7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9VXK7
            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A Arakawa T., Shingawa A., Shingara K., Yoshino M., Itoh M., Ishii Y., Rawai J., Shingawa A., Shingara K., Konno H., Adachi J., Fukuda S., Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Alicawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Saito T., Oshori T., Bono H., Rasukawa T., Saito R., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Ruehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Sakuli F., Suzuki R., Tomita M., Wagner L., Washio T., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Schriml L., Matsula M., Carninci P., de Bonaldo M.F., Browstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Romstein M., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., A., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Sotoch K.-F., Winshaw-Bonis A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S., A., Mynshaw-Bonis A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51 AVAPK----PSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRF 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MAVLSAPGLRGFRILGLRSSVGPAVQARGVHQSVATDGP-----SSTQPALPK--AR 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107 GVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83.8%; Score 936.5; DB 11; Length 224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            167 VRGCDRIVPYDIYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MRCD: AKO03132; BAB22592.1; -.
MGD: MGI:1922656; 1010001M04Rik.
InterPro: IRR002096; Complex1_20kD.
PROSITE; PS01150; COMPLEX1_20K, 1.
SEQUENCE 224 AA; 24683 MW; 234F3FF0ABC36A92 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
1010001M04RIK PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81.5%; Pred. No. 2.2e-79; ive 11; Mismatches 14
                                                      224 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               214 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                    STRAIN=C57BL/6J; TISSUE=HEART;
MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel. 16, TremBLrel. 16, (TremBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 81.53
Matches 185; Conservative
                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 409:685-690(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09H3K5;
01-MAR-2001
01-MAR-2001
01-JUN-2001
                                       <u>0</u>9DC70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9H3K5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                m
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
Q9H3K5
                           09DC10
                                                                       ACCOCO ODTAINS THE SECTION OF SEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC
DT
DT
DT
```

```
MEDLINE=20196006; PubMed=10731132;

MEDLINE=20196006; PubMed=10731132;

Adams M.D. Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Galle R.F.,
Adams M.D. Celniker S.E., Holt R.A., Evans C.A., Galle R.F.,
Adams M.D. Celniker S.E., Holt R.A., Long Q., Chen L.X.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
An Erandon R.C., Rogers Y.-H.C., Blazej R.G., Change M., Pfeiffer B.D.,
An K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Ann K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Ann K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannckon C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beaaley E.M.,
Bescon K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
Ab Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
Ad Epilos B., Delicher A., Deng Z., Mays A.D., Dewn I., Diletz S.M.,
Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
Porbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
Fosler C., Gabriellian A.E., Garg N.S., Gelbart W.M., Glasser K.,
A Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVM 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 IVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDI-- 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 IVAGTLTNKMAPALRK---SPPRP------DAGAALRGLHGELRQRGRLLPLFLLG 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MAVLSAPGLRGFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRG
Craniata; Vertebrata; Buteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4; Length 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                             TISSUE-BRAIN;
Mao Y.M., Xie Y., Huang X.Y., Ying K., Dai J.L.;
Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.
EMBL, AF065512; AAG43130.1;
InterPro; IPR002096; Complex1_20kD.
Pfam; PF01058; oxidored_q6; 1.
SEQUENCE 214 AA; 23522 MW; 8DCE7E13F2FCC7E3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------YIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      168 GEGLRPHRARGHLHPRLPTTAEALLYGILOLORKIKRERRLQIWYRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. 3.7e-68;
7; Mismatches 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                221 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vuery Match 72.9%; Score 815.5;
Best Local Similarity 75.3%; Pred. No. 3.7e
Matches 171; Conservative 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9VXK7;
01-MAY-2000 (TrEMBLrel. 13, C;
01-MAY-2000 (TrEMBLrel. 13, Ls
01-JUN-2001 (TrEMBLrel. 17, Ls
CG9172 PROTEIN.
```

ω,

```
A Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D., Ra Ballew R.M., Bassu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Beasne R.M., Beasne A., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Bortchan M.R., Bouck J., Brockstein P., Brocklier P., Brotkler P., Dennes M., Dagan Rocha S., Dunkov B.C., Dunn P., Brosler C., Gabriellan A.E., Carg N.S., Gelbart W.M., Glasser K., Rosler C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K., Rarpen G.F., Gorrell J.H., Gu Z., Glan P., Harris M., Harryey D., Hemman T.J., Hernandez J.R., Houck J., Harris N.L., Harryey D., Hemman T.J., Hernandez J.R., Houck J., Brathon F., Karpen G.H., Ke Z., Kennison J.A., Katchum K.A., Rathel B., McIntosh T.C., McLed M.P., Moshrefi A., Matchi B., McIntosh T.C., McLed M.P., Moshrefi A., Matchi B., McIntosh T.C., McLed M.P., Moshrefi A., Moshrefi B., McIntosh T.C., McLed M.P., Moshrefi A., Nelson R., Mullshian N.V., Mobary C., Morris J., Puri V., Reese M.G., Ra Reinert K., Remington K., Sanders R.D.C., Scheeler F., Shen H., Shue B.C., Siden Klamon G.S., Pollard J., Puri V., Rese M., Shie B.C., Siden Klamon G.S., Pollard J., Puri V., Rese M., Shie B.C., Siden Klamon G.S., Pollard J., Puri V., Rassarman D.A., Weitsenbach J., Rassarman D.A., Weitsenbach J., Rassarman D.A., Weitsenbach S., Naodage T., Woodage T., Brank J., Shang S., Yao G., A., Being X.H., Zhong F.N., Ruben G. Schener S., Shang X.H., Shong F.N., Raben S., Rassarman D.A., Weitsen G., Shang S., Sh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INCERT PROJUSS: Oxidored g6; 1.
PROSITE; PS01150; COMPLEX1_20K; 1.
SEGNIFINCE 212 AA; 24245 MW; 4051762AB450575A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83.8%; Pred. No. 2e-61;
Live 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179 VPGCPPTABALMYGILQLQKKVKRMRTLQMWYRK 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180 IPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPR002096; Complex1_20kD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 83.8 tes 129; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=3873;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09SP38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9SP38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09SP38
                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C., Alali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Kimmel B.E., Kodira C.D., Kraff C.K. Kravitz S., Kulp D., Lai Z., Lask D.F., Lai Y., Lai J., Li J., Mulp Y., Lin X., Martei B., McIntosh T.C., McLeod M.P., McPherson D., McFrullov G., Milshina N.Y., Mobrry C., Morris J., Mosherfi A., Mount S.M., Moy M., Murphy L., Muzhy D.M., Nelson D.L., Ra Hazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H., Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T., Sher B.C., Stapleton M., Skupski M.P., Smith T., Sher B.C., Stapleton M., Skupski M.P., Smith T., Sher S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A., R. Wellskas S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q., A., R. Wellskas S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q., Zheng L., Zhong X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O., Schence 287:2185-2186-2000).

Re Phil., Bedologolo, Rake B.S. 21: ...
Re Phil. Bedologolo, R., Pitton G., Collar S., Re Reiner S., Reiner S., Smith H.O., Re Reiner Personance of Drosophila melanogaster.",
Science 287:2185-2186-21: ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (Fruit fly).
Bukaryota: Metazoa; Arthropoda: Tracheata; Hexapoda; Insecta:
Pterygota: Neotera: Endopterygota: Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55 --KPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRA 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  113 SPRQSDVMIVAGTLINKMAPALRKVYDQMPEPRIVVSMGSCANGGGYYHYSYSVVRGCDR 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 IRSAMMSSTLSRALQKATQTPNASISALPALNLALVRQQQTLPVAEVAQNLPK-KGYSPF 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20196006, PubMed=10731132, Adams M.D. Gelniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Admanatides P.G., Scherer S.E., II P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y. H.C., Blazej K.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23; Indels 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67.4%; Score 753.5; DB 5; Length 221; 64.3%; Pred. No. 2.2e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS01150; COMPLEXI_20K; 1. SEQUENCE 221 AA; 24594 MW; 462CD9E82DA429ED CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173 IVPVDIYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 IIPVDIYVPGCPPTAEALMYGVLQLQKKVKRMKTLQMWYRK 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 LRSSVGPAVQARGVHQSVATDGPS-STQPA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FlyBase; FBgn0030718; CG9172.
InterPro; IPR002096; Complex1_20kD.
Pfam; PF01058; oxidored_q6; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 64.39
Matches 142; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-BERKELEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CG2014 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9VAK5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C9VAK5
```

õ g δ g ò

```
ó
                                                                                                                                                                                                                                                                                                         Lupinus luteus (Yellow lupine).
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
Suromids I; Fabales; Fabaceae; Papilionoideae; Lupinus.
                                                                                                                                 60 GEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDV 119
                                                                                                                                                                                                 59 GEWICARLDDLLNWGRKGSLWPLIFGLACCAVEMMHIAAPRYDMDRYGVVFRASPRQADV 118
                                                                                                                                                                                                                                                                     120 MIVAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIY 179
                                                                .,
0
66.5%; Score 743; DB 5; Length 212;
                                                            7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
```

```
148 VSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQLQRKIKRERRL 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rhodomonas salina.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                        :|:
187 LLWWTK 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=3873;
                                                                                                                        208 QIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Sim
Matches 123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                      096804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9LKH4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Q9LKH4
                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                              096804
                                                                        g
                                                                                                                                                             g
                                                                                                                                                                                                                                                                                      HD DE BELL DE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;;
;;
                               H.;
the NADH:ubiquinone oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114 PRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRI 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54 PKPSSRGEYVVAKLDDLVNWARRSSLWPWTFGLACCAVEMMHMAAPRYDMDRFGVVFRAS 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54 AGISKTABEVISKVDDLMNWARRGSIWPWIFGLACCAVEMMHTGAARYDLDRFGIIFRPS 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lupinus luteus (Yellow lupine).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids I; Fabales; Fabaceae; Papilionoideae; Lupinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYV 147
                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MALLIRTATRIPQLAPSSHRILSLHTTL-PSLSP----DTAATPAPYSRPP--PPSTSST 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :| |:| | TILPSLSPETATTPYARPPPFSTSSPAGISKTAEFVISKVDDLMNWARRGSIWPWTFGLA 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STQPAL-----PKARAVAPKPSS-----RGEYVVAKLDDLVNWARRSSLWPMTFGLA 87
                                                                                                                                                                                                                                                                                                                                                                                           1 MAVLSAPGLR-----GFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVA
                                                                                                                                                                                                                                                                                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 10; Length 192;
                                                                                                                                                                                                                                                                                                         Length 213;
                                                                                                                                                                                                                                                                                                                                                     39; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64.5%; Score 721.5; DB 10; Length
71.0%; Pred. No. 1.8e-59;
.ive 20; Mismatches 21; Indels
                                                                 complex.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF185211; AAF010371;
-InterPro; IFR002096; Complex1_20kD.
Pfam; PF01088; oxidored_q6; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases. EMBL, AF281035, AAF91434.1; -. InterPro, IPR002096; Complex1_20%D, Pfam; PF01058; oxidored_q6: 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
Plekna D., Sikorski M., Augustyniak H.;
"L. luteus mRAM for PSST subunit of the NADH:ubiquinone oxidoreductase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2000 (TrEMBLE). 15, Created)
01-OCT-2000 (TrEMBLE). 15, Last sequence update)
01-UN-2001 (TrEMBLE). 17, Last annotation update)
NADH-UBIQUINONE OXIDOREDUCTASE SUBUNIT PSST (FRAGMENT).
                                                                                                                                                                                                                              23608 MW; CB39C11B002215E8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21418 MW; 02B1B848B27104C5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   174 VPVDIYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
65.4%; Score 731; DB 10;
Best Local Similarity 63.2%; Pred. No. 2.7e-60;
Matches 139; Conservative 28; Mismatches 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   192 AA
TISSUE-ROOT;
Piekna D., Sikorski M., Augustyniak
"L. luteus mRNA for PSST subunit of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF01058; oxidored_q6; 1.
PROSITE; PS01150; COMPLEX1_20K; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                 213 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE 192 AA;
                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 132; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=3873;
                                                                                                                                                                                                           Ubiquinone.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ubiquinone.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9LKG9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9LKG9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9LKG9
       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
01-001-2000 (TrEMBLrel. 15, Created)
01-007-2000 (TrEMBLrel. 15, Last sequence update)
01-007-2001 (TrEMBLrel. 17, Last annotation update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
NADH-UBIQUINONE OXIOREDCTARE SUBUNIT PST.
Lupinus luteus (Yellow lupine).
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids I: Fabales; Fabaceae; Papilionoideae; Lupinus.
118 DVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVD 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          58 SRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEWMHMAAPRYDMDRFGVVFRASPRQS 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 NYTKFVISKIDDLINWARRGSLWPMTFGLACCAVEMMHAGASRYDFDRFGIIFRASPRQS 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LECTOR OF A STATE OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY CALOTOPIASTS have mitochondria that originate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 158,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from the host.";
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AF288090; ARG17753.1;
InterPro; IPR02096; Complex1_20kD.
Pfam: PF01058; oxidored_q6; 1.
PROSITE; PS01150; COMPLEX1_20k; 1.
Oxidoreductase; Mitcoinondrion.
SEQUENCE 158 AA; 17819 MW; 0798BB29D71611C4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Piekna D., Sikorski M., Augustyniak H.;
"Luplius luteus PSST gene.";
Submitted (JULOS 2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AT279902; AAF91429.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mitochondrion.
Eukaryota; Cryptophyta; Cryptomonadaceae; Rhodomonas.
NCBL_TaxID=52970;
                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
NADH DEHYDROGENASE SUBUNIT 10 (EC 1.6.5.3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.0%; Score 716; DB 8; 79.9%; Pred. No. 4.6e-59; ive 22; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         178 IYIPGCPPTAEALLYGILQLQRKIKRERRLQIWY 211
```

ó

S

```
195 QRKMRNTKITRMWYRK 210
                                                      198 ORKIKRERRLOIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity 78.29
es 122; Conservative
                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                       Nephroselmis olivacea.
                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-NIES-484;
                                                                                                                                                                                                                                                      Mitochondrion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
09PGJ4
ID 09PGJ4;
DT 01-OCT-
DT 01-OCT-
DE NADH-UB
GN XF0306
                                                                                                                                             Q9TCA4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                          Q
                                                      δŽ
                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                     3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>,
                                                                                                                                                                                               88 CCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLINKMAPALRKVYDQMPEPRYV 147
                                                                                                                                                                                                              148 VSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQLQRKIKRERRL 207
                                                                                                                                                                                                                                                                Diafarzadeh Andabili R., Kerscher S., Zwicker K., Radermacher M., Lindahl M., Schaegger H., Brandt U.; Lindahl W., Schaegger H., Brandt U.; Thiophysical and Structural Characterization of Proton-Translocating NADH-Dehydrogenase from Yarrowia lipplytica.; Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.

EMBL; AJ250340; CAB65525.1; LinterPro; IPR002096; Complexi_20kb.

Fram; PF01058; oxidored_q6: 1.
PROSITE; PS01150; COMPLEXI_20k; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKV 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBUNIT NUKM OF PROTEIN NADH: UBIQUINONE OXIDOREDUCTASE (COMPLEX I).
C976335ECFD686ED CRC64;
                                                                                                                                           41 STQPAL-----PKARAVAPKPSS-----RGEYVVAKLDDLVNWARRSSLWPMTFGLA 87
                                                                                                                                                            18 RSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYVVAKLDDLVNWARRS 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RAYSAPAGIPRVSSSSMFIDFPLPSQ------QKPNSAVDYTLTTLDAVANWARQG 74
                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-UNAY-2001 (TrEMBLrel. 17, Last annotation update)
SUBUNIT NUKM OF PROTEIN NADH:UBIQUINONE OXIDOREDUCTASE: (COMPLEX PRECURSOR (EC 1.6.99.3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yarrowia lipolytica (Candida lipolytica).
Eukaryota, Fungi, Ascomycota, Saccharomycotina, Saccharomycetes,
Saccharomycetales, Dipodascaceae, Yarrowia.
                                                                                                                    13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62.8%; Score 702; DB 3; Length 210;
63.8%; Pred. No. 1.3e-57;
live 29; Mismatches 32; Indels
                                                                                        ; Score 712.5; DB 10; Length
; Pred. No. 1.4e-58;
21; Mismatches 22; Indels
                                                   210 AA; 23455 MW; C5E1AE2F48C412E3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                               210 AA.
InterPro; IPR002096; Complex1_20kD. Pfam; PF01058; oxidored_q6; 1. PROSITE; PS01150; COMPLEX1_20K; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 210 AA; 23430 MW;
                                                                                          63.78;
                                                                                                                Matches 130; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 63.8
Matches 125, Conservative
                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=4952;
                                                                                                                                                                                                                                                                                                                      :|: :
205 LLWWTK 210
                                                                                                                                                                                                                                                                                                    208 QIWYRR 213
                                      Ubiquinone.
SEQUENCE
InterPro;
Pfam; PF01
                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                              Q9UUT7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78
 S W W W W W
                                                                                                                                                                                               δ
                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δý
```

```
"The complete mitochondrial DNA sequences of Nephroselmis olivacea and Pedinomonas mitor: two radically different evolutionary patterns within the green algae."; Plant Cell 11:1717-1729(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63 DVMIVAGTLINKMAPALRKVYDQMPEPRWVVSMGSCANGGGYYHYSYSVVRGCDRIVPVD 122
138 YDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQL 197
                                                          135 YDQMPEPRWVISMGSCANGGGYYHFSYSVVRGCDRIVPVDVYVPGCPPTSEALMYGVFQL 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58 SRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQS 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118 DVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVD 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Turmel M., Lemieux C., Burger G., Lang B.F., Otis C., Plante I., Gray M.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Turmel M., Lemieux C., Burger G., Lang B.F., Otis C., Plante I., Gray M.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62.5%; Score 699; DB 8; Length 158; 78.2%; Pred. No. 1.8e-57; ive 19; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL. AFU1018 AAF03193.1. -
InterPro; IPR002096; Complex1_20kD.
Pfam; PF01058; oxidored_q6; 1.
PROSITE; PS01150; COMPLEX1_20k; 1.
SEQUENCE 158 AA; 17781 MW; CE82530D4724EB3F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Chlorophyta; Prasinophyceae;
Chlorodendrales; Chlorodendraceae; Nephroselmis.
NCBL_TaxID=31312;
                                                                                                                                                                                                                                                                                                                                                                                 Q9TCA4;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-UNN-2001 (TrEMBLrel. 17, Last annotation update)
NADH DEHYDROGENASE SUBUNIT 10 (EC 1.6.5.3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9PGJ4 PRELIMINARY; PRT; 191 AA.
Q9PGJ4.
01-00T-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0T-2001 (TrEMBLrel. 17, Last annotation update)
ND-JUN-2001 (TrEMBLrel. 17, Last annotation update)
NFOBJ6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178 IYIPGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-NIES-484;
MEDLINE=99418884; PubMed=10488238;
```

ö

ဖ

```
NCBI_TaxID=69394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9K1C2
                                                                                                                                                                                                                                            FIGE;
                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MC58.
     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ĥ
                                                                                                                        RA MEDLINE=20136511; Pubmed=1091034;

RA Simpson A.J.G., Reinach F.C., Arruda P., Abreu F.A., Acencio M.,

RA Alvarenga R., Alves L.M.C., Arruda P., Abreu F.A., Acencio M.,

RA Alvarenga R., Alves L.M.C., Arrya J.E., Baia G.S., Baptista C.S.,

RA Barros M.H.; Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S.,

RA Buenco M.R.P., Camargo A.A., Comargo L.E.A., Carraro D.M., Carrer H.,

RA Colauto N.B., Colombo C., Costa F.E., Costa M.C.R., Costa-Neto C.M.,

RA Coutinho L.L., Cristofani M., Dias.Neto E., Docena C., El-Dorry H.,

RA Fraga J.S., Franca S.C., Franco M.C.A., Ferro J.A.,

RA Fraga J.S., Franca S.C., Franco M.C.A., Ferro J.A.,

RA Fraga J.S., Franca S.C., Franco M.C.A., Forhme M., Furlan L.R.,

RA Hob P.L., Hoheisel J.D., Junqueira M.H.S., Comes S.L., Gruber A.,

RA Krieger J.E., Kuramae E.E., Laigret E., Lombais M.R., Leite L.C.C.,

RA Machado M.A., Madeira A.M.B.N., Madeira H.M.F., Marsukuma A.Y.,

RA Manck E.B., Miracca E.C., Miyaki C.Y., Monteira C.E.,

RA Manck C.P.M., Martins E.A.L., Martins E.M.F., Marsukuma A.Y.,

RA Mond D.H., Nograi M.A., Nascimento A.L.T.O., Netto L.E.S.,

RA de Oliveira M.C., de Oliveira M.S., Pereira H.A. Jr., Pesquero J.B.,

RA de Souza A.P., Tereazi M.M., da Silva F.R., Silva M.A.,

RA da Silva A.C.R., da Silva A.M., da Silva F.R., Silva M.A.,

RA de Souza A.P., Tereazi M.R., Tasai S.N., Tsuhako M.H.,

RA de Souza A.P., Tereazi M.R., Tasai S.N., Tsuhako M.H.,

RA Zago M.A., Zatz M., Meidanis J., Setubal J.C.; Ilva M. A.,

"The genome sequence of the plant pathogen Xylella fastidiosa.";

RT "The genome sequence of the plant pathogen Xylella fastidiosa.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99 PRYDMDRFGVVFRASPRQSDVMIVAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGG 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33 PQGESPLLQKG-----YVTTSVDALLNWARTGSMWPMTFGLACCAVEMMHAGA 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39 PSSTQPALPKARAVAPKPSSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC1955.
Caulobacter crescentus.
Bacteria: Proteobacteria; alpha subdivision; Caulobacter group;
                 Bacteria; Proteobacteria; gamma subdivision; Xanthomonas group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20858 MW; 7A14CC80A8857CF5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          159 YYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQLQRKIKR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
NADH_DEHYDROGENASE I, B SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58.5%; Score 654; DB 2; 72.1%; Pred. No. 3.4e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mature 406:151-159(2000).

EMBL, AE003884, AAF83117.1;
InterProp. IPR002096; Complex1_20kD.

Pfam; PF01058; Oxtdored_q6; 1.

PROSITE; PS01150; COMPLEX1_20k; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                  MEDLINE=20365717; PubMed=10910347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 119; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  191 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Xylella fastidiosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Complete proteome.
SEQUENCE 191 AA;
                                Xylella.
NCBI_TaxID=2371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caulobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9A6X1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09A6X1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9A6X1
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-MCSB / SEROGROUP B;

STRAIN-MCSB / SEROGROUP B;

MEDLINE-201755; PubMed=10710307;

Tettelin H., Saunders N.J., Heidelberg J., Jeffries A.C., Nelson K.E., Eisen J.A., Ketchum K.A., Hood D.W., Peden J.F., Dodson R.J.,

Melson W.C., Gavinn M.L., DeBoy R., Peterson J.D., Hickey E.K.,

Haft D.H., Salzberg S.L., White O., Pleischmann R.D., Dougherty B.A.,

Mason T., Ciecko A., Parksey D.S., Blair E., Cittone H., Clark E.B.,

Cotton M.D., Utterback T.R., Khouri H., Qin H., Vamathevan J.,

Gill J., Scarlato V., Masignani V., Pizza M., Grandi G., Sun L.,

Smith H.O., Fraser C.M., Maxon E.R., Rappuoli R., Venter J.C.;

"Complete genome sequence of Neisseria meningitidis serogroup B strain
MEDILINE-2117369; Pubmed-11259647; Nelson K.E., Nelson W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson K.E., Nieman W.C., Feldblyum T.V., Alley M.R.K., Ohta N., Maddock J.R., Potocka I., Nelson W.C., Newton A., Stephens C., Phadke N.D., Ely B., Detocka I., Nolson W.C., Newton A., Stephens C., Phadke N.D., Ely B., Detocka I., Nolson W.C., Newton A., Stephens C., Phadke N.D., Ely B., Detocka I., Nolson R.J., Durkin A.S., Gwinn M.L., Haft D.H., Utterback T., Tran K., Wolf A., Vanathevan J., Ermolaeva M., White O., Salborg S.L., Vener J.C., Shapiro L., Fraser C.M.;
"Complete genome sequence of Caulobacter crescentus.";
Proc. Natl. Acad. Sci. U.S.A. 98:4136-4141(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138 YDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGILQL 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Neisseria meningitidis (serogroup B).
Bacteria; Proteobacteria; beta subdivision; Neisseriaceae; Neisseria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34 VAIDGPSSTQPALPKARA------VAPKPSSRGEYVVAKLDDLVNWARRS 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78 SLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        122 YDQMPEPRYVISMGSCANGGGYYYXSYSVVRGCDRVVPVDIYVPGCPPTAEALVYGVLQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                           17;
                                                                                                                                                                                                                                                                                                                                                                                                         Length 193;
                                                                                                                                                                                                                                                                                                                                                                                                      57.5%; Score 642.5; DB 2; Length 66.1%; Pred. No. 4e-52; ive 20; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                        C5F57EAEEB341862 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QYRIC2;
01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-UNT-2001 (TrEMBLrel. 17, Last annotation update)
NADH DEHYDROGENASE I, B SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR002096; Complex1_20kD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF01058; oxidored_q6; 1.
PROSITE; PS01150; COMPLEX1_20K; 1.
Complete proteome.
                                                                                                                                                                                                                                                                                                                                     21082 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Science 287:1809-1815(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AE002381; AAF40696.1;
TIGR; NMB0242; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                     193 AA;
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                 Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QRKIKR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |:||:|
182 QKKIRR 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=491;
                                                                                                                                                                                                                                                                                     CC1955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                     SEQUENCE
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

STRAIN=22401 / SEROGROUP A / SEROTYPE 4A;

MEDLINE=2022556; PubMed=10761919;

Barkhill J., Achtman M., James K.D., Bentley S.D., Churcher C.,

Riee S.R., Morelli G., Basham D., Brown D., Chillingworth T.,

Davies R.M., Davis P., Devlin K., Feltwell T., Hamlin N., Holroyd S.,

Jagels K., Leather S., Moule S., Mungall K., Quail M.A.,

Rajandream M.A., Rutherford K.M., Simmonds M., Skelton J.,

Whitehead S., Spratt B.G., Barrell B.G.;

"Complete DNA sequence of a serogroup A strain of Neisseria
                                                                                                                                                                                                                                                                                          62 YVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMI 121
                                                                                                                                                                                                                                                            122 VAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIP 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 YVVAKLDDLVNWARRSSLWPMTFGLACCAVENMHMAAPRYDMDRFGVVFRASPRQSDVMI 121
                                                                                                                       Gaps
                                                                                                                                                                                           Neisseria meningitidis (serogroup A).
Bacteria: Proteobacteria: beta subdivision; Neisseriaceae; Neisseria
NCBI_TaxID=65699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11 FITTSADTVLNYMRTGSLWPVTFGLACCAVEMMHAGMARYDLDRFGLIFRPSPRQADLMI 70
                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ·;
                                                                     54.8%; Score 613; DB 2; Length 160; 73.9%; Pred. No. 1.8e-49; ive 22; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match 54.1%; Score 605; DB 2; Length 160; Best Local Similarity 73.2%; Pred. No. 9.9e-49; Matches 104; Conservative 22; Mismatches 16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 404:502-506(2000).

BMBL, AL162752. CAB8318.1.

PROSTTE: PRO1058; complex1_20kD.

PRONTE: PRO1150; complex1_20kD.

PROSTTE: PS01150; complex1_20k.1.

SEQUENCE 160 AA: 17619 MW; 4E9CF64C554799AC CRC64;
  17629 MW; F1616423A8D799AF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 17, Last annotation update)
NADH DEHVDROGENASE I CHAIN B (EC 1.6.5.3).
NUOS OR NMA0018.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                      182 GCPPTAEALLYGILQLQRKIKR 203
                                                                Query Match
Best Local Similarity 73.99
Matches 105; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
160 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            menigitidis 2249
  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9JX79
Q9JX79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    997X79
  g
                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
```

Search completed: February 12, 2002, 20:46:45 Job time: 355 sec

182 GCPPTAEALLYGILQLQRKIKR 203

131

Dp

δý

ŏλ

Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia

Zea mays protein f
Pyridine nucleotid
Mouse taste cals
Polypeptide encode
Cglutamicum prote
Hydrogenase small
Arabidopsis thalia
Arabidopsis dia squenc

Perfect score:

Sequence:

OM protein

Run on:

Scoring table:

Searched:

Database :

Result ٠ چ

```
Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; CNS; paripheral nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; heemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
                                                                                                                                                                                                                                                                                                                              AAY84626
AAY92051
                                                                                                                                                              AAG10118
AAM39519
                                                                                                                                                                                                                                                AAM41029
AAW72010
                                                                                                                                                                                                                                                                  AAW72165
AAG53685
AAG53684
                                                                                                                                                     AAG21665
                                                                                                                                                                                    AAB94374
                                                                                                                                                                                             AAG22172
                                                                                                                                                                                                                                                                                                  AAG53683
                                                                                                                                                                                                                                                                                                                                                                                                                         AAM39624 standard; Protein; 213 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human polypeptide SEQ ID NO 2769.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0488725.
2000US-052317.
2000US-0528042.
2000US-05281450.
2000US-0653450.
2000US-0653450.
2000US-0653450.
2000US-0653450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-OCT-2001 (first entry)
WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-APR-2000; 2
09-JUL-2000; 2
19-JUL-2000; 2
03-AUG-2000; 2
14-SEP-2000; 2
19-OCT-2000; 2
29-NOV-2000; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-JUL-2001.
                  leukaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM39624;
                                                                                                                                                                                                                                                                                                                                                                                                       H
                                                                                                                                                                                                                                                                                                                                                                                                                AAM39624
 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                    Human polypeptide
Human polypeptide
Human secreted pro
Human secreted pro
Zea mays protein f
Arabidopsis thalia
Arabidopsis thalia
Arabidopsis thalia
Zea mays protein f
Zea mays protein f
                                                                              (without alignments)
418.282 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                               1 MAVLSAPGLRGFRILGLRSS......ILQLQRKIKRERRLQIWYRR 213
                                                                    February 12, 2002, 19:56:10 ; Search time 37.72 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                 2 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
3 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
4 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
5 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
5 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
6 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
7 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
8 SIDS2/goddata/geneseq/genesegp/AA1981.DAT:*
9 SIDS2/goddata/geneseq/genesegp/AA1991.DAT:*
10: SIDS2/goddata/geneseq/genesegp/AA1991.DAT:*
11: SIDS2/goddata/geneseq/genesegp/AA1991.DAT:*
12: SIDS2/goddata/geneseg/genesegp/AA1992.DAT:*
13: SIDS2/goddata/geneseg/genesegp/AA1992.DAT:*
14: SIDS2/goddata/geneseg/genesegp/AA1992.DAT:*
15: SIDS2/goddata/geneseg/genesegp/AA1992.DAT:*
16: SIDS2/goddata/geneseg/genesegp/AA1992.DAT:*
17: SIDS2/goddata/geneseg/genesegp/AA1993.DAT:*
18: SIDS2/goddata/geneseg/genesegp/AA1995.DAT:*
19: SIDS2/goddata/geneseg/genesegp/AA1997.DAT:*
19: SIDS2/goddata/geneseg/genesegp/AA1997.DAT:*
19: SIDS2/goddata/geneseg/genesegp/AA1997.DAT:*
19: SIDS2/goddata/geneseg/genesegp/AA1997.DAT:*
19: SIDS2/goddata/geneseg/genesegp/AA1997.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /SIDS2/gcgdata/geneseg/genesegp/AA1999.DAT:*/SIDS2/gcgdata/geneseg/genesegp/AA2000.DAT:*/SIDS2/gcgdata/geneseg/genesegp/AA2001.DAT:*
                                                                                                                                                                                                                                                                                                             /SIDS2/gcgdata/geneseq/geneseqp/AA1980.DAT
                   Compugen Ltd
                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
         GenCore version 4.5
Copyright (c) 1993 - 2000 Comp
                                                                                                                                                                                 522463 seqs, 74073290 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAM41410
AAB34291
AAB34292
AAG33025
AAG14738
AAG18237
AAG18236
AAG33026
AAG33026
                                                  - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM39624
                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΠD
                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                  A_Geneseq_1101:*
                                                                                                             US-09-525-867-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1118
1118
1118
826
813
725
725
725
725
725
705
663
```

```
182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δý
                                                                                                                                                        The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM36642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynuclectides are useful in gene therapy. A composition containing a polypeptide or polynuclectide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system alseases, such as localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and SNy-Drager Syndrome other uses include the utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                             The sequence data for this patent did not form part of the printed
                          Wang D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; hamenostatic; alzease; haminington's disease; hamostatic; amyotrophic lateral sclerosis; Shy-brager Syndrome; chemotactic; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 IVAGTLTNKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 EYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVM 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MAVLSAPGLRGFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries - \,
                          Ren F, W
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                    DB 22; Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                          Oian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 5.1e-117;
                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                     Chen R, Ma Y,
Xu C, Xue AJ,
                                                                                                                                       Example 4; SEQ ID NO 2769; 10078pp; English.
                     Asundi V, Chen R, Ma Y, Wehrman T, Xu C, Xue AJ. Goodrich R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Pred. nc.
                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 1118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 PGCPPTAEALLYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAM41410 standard; Protein; 214 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human polypeptide SEQ ID NO 6341.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                    WPI; 2001-442253/47
                      Liu C, A
Wang 2, W
Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
Matches 213; Conserv
                                                                                                                                                                                                                                                                                                                                                                 213 AA;
(HYSE-) HYSEQ INC
                                                                                 N-PSDB; AAI58780
                                                                                                                                                                                                                                                                                                                                           specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-OCT-2001
                                   Wang J, 1
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   leukaemia
                                                                                                                                                                                                                                                                                                                                                                  Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAM41410;
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                       Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAM41410
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAA3642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system, such as peripheral nervous system, such as peripheral nervous system diseases, such as lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, and thrombolytic activity, chemotactic/chemokinetic activity, haemostatic assays for receptor activity, arthritis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and constraints.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Note: The sequence data for this patent did not form part of the printed specification.
                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVM 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 IVAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                            Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    useful for treating disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MAVLSAPGLRGFRILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ren F, W
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                      Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
100.0%; Score 1118; DB 22;
Best Local Similarity 100.0%; Pred. No. 5.2e-117;
Matches 213; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                   Liu C, Asundi V, Chen R, Ma Y,
Wang Z, Wehrman T, Xu C, Xue AJ,
Zhou P, Goodrich R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 2; SEQ ID NO 6341; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel nucleic acids and polypeptides, us such as central nervous system injuries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGCPPTAEALLYGIDOLORKIKRERRLQIWYRR
                                                                                                 2000US-0552317.
2000US-0552317.
2000US-0620312.
2000US-0653450.
200US-0653450.
2000US-0653450.
2000US-0653450.
                                                   26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-442253/47.
N-PSDB; AAI60566.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   214 AA;
                                                                                                                                                                                                                                                                                                                                     (HYSE-) HYSEQ INC.
                                                                                                                                                                           19-JUL-2000)
03-AUG-2000)
14-SEP-2000)
19-OCT-2000)
29-NOV-2000)
                                                                                                                            25-APR-2000;
09-JUL-2000;
26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                   Tang YT,
Wang J, W
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seguence
```

ö

AAB34291

Homo sapiens.

```
Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic; antidiabetic; antidnflammatory; antiulcer; vulnerary; anticonvulsant; antidecterial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder; neurological disease; infection; human; secreted protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to the isolation of genes AACS9507-C59556 encoding the human secreted proteins AAB34218 B34264) This sequence represents a peptide fragment homologus to the protein encoded by the gene isolated in the present invention. The sequence is a search result from a BLASTX homology search. The genes and proteins are useful for preventing, ameliotating or treating medical conditions, e.g. by protein or gene therapy. The genes are isolated from a range of human tissues disclosed in the specification. The nucleic acids, proteins, antibodies and (ant)agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast and overtain cancer, and other cancers of the adrenal gland, bone, bone marrow, breast, gastrointestinal tract, liver, lings, or urogenital; (b) immune disorders e.g. Addison's disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 allergies, autoimmune haemolytic anaemia, autoimmune thyroiditis, diabetes mellitus. Crohn's disease, multiple sclerosis, rheumatoid arthritis and ulcerative collitis; (c) cardiovascular disorders such as myocardial ischaemias; (d) wound healing; (e) neurological diseases e.g. cerebral anoxia and epilepsy; and (f) infectious diseases as viral, bacterial, fungal and parasitic infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70 LVNWARRSSLWPWTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLINK 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ilavrsgvgaalqvrgvhssmaadspsstqpavsqaravvpkpaalpssrgeyvvakldd 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel human secreted proteins useful for diagnosis, prevention and treatment of disorders including neurological, cell proliferative, cardiovascular, autoimmune and inflammatory disorders and microbial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14 ILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPK----PSSRGEYVVAKLDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130 MAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCP 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21; Length 175;
                                                                                                                                                                                                                          Human secreted protein BLAST search protein SEQ ID NO: 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 826; DB 21
Pred. No. 2e-84;
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Pages 379-380; 383pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ruben SM, Komatsoulis G;
AAB34291 standard; Protein; 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73.9%;
88.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-MAR-2000; 2000WO-US06044.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0124099.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>..</u>
                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 155; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-602124/57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200055352-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12-MAR-1999;
03-DEC-1999;
                                                                                                                                          02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rosen CA,
                                                                        AAB34291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
```

```
The invention relates to the isolation of genes AAC59507-C59556 encoding the human secreted proteins AAB34218-B34264) This sequence represents a fragment of the protein encoded by the gene isolated in the present invention. The sequence is used as a query sequence for doing BLASTX searches to determine homologous sequence to the protein. The genes and proteins are useful for preventing, ameliorating or treating medical conditions, e.g. by protein or gene therapy. The genes are isolated from a range of human tissues disclosed in the specification. The nucleic acids, proteins, antibodies and (ant)agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast and covarian cancer, and other cancers of the adrenal gland, bone marrow, breast, gastrointestinal tract, liver, lung, or urogenital; (b) immune disorders e.g. Addison's disease, allergies, autoimmune thyroiditis, diabetes mellitus, Crohn's disease, multiple sclerosis, rheumatoid arthritis and ulcerative colitis; (d) vand healing; (e) neurological diseases e.g. cerebral anoxia and epilepsy; and (f) infectious diseases such as viral, beaterial, fungal and parasitic infections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                    Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic; antidiabletic; antinflammatory; antiulcer; vulnerary; anticonvulsant; antidecterial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder; neurological disease; infection; human; secreted protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14 ILGLRSSVGPAVQARGVHQSVATDGPSSTQPALPKARAVAPKPSSRGEYVVAKLDDLVNW 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel human secreted proteins useful for diagnosis, prevention and treatment of disorders including neurological, cell proliferative, cardiovascular, autoimmune and inflammatory disorders and microbial
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 171;
                                                                                                                                                                                                                      Human secreted protein BLAST search protein SEQ ID NO: 138.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 813; DB 21;
Pred. No. 5.5e-83;
0; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page 382; 383pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ġ
                                                                                                              Ą.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Komatsoulis
                                                                                                           AAB34292 standard; Protein; 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72.7%;
91.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000WO-US06044.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0168661.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0124099
                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        al Similarity 91.8
157; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-602124/57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       171 AA;
                                                                                                                                                                                                                                                                                                                                                                                                    WO200055352-A2.
                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-MAR-1999;
                                                                                                                                                                                02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                        21-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rosen CA,
                                                                                                                                               AAB34292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                 121
                                                                                         AAB34292
                                                                        RESULT
                 g
                                                                                                                              ó
```

.. H

g à g

δ

```
990S - 0138847

990S - 0138847

990S - 0139452

990S - 0139452

990S - 0139455

990S - 0139455

990S - 0139456

990S - 0149466

990S - 0149466

990S - 0149466

990S - 0144336

990S - 0144336

990S - 0144336

990S - 0144336

990S - 0144846

990S - 0144846

990S - 0144836

990S - 0144884

990S - 0144836

990S - 0144836

990S - 0144864

990S - 0145086

990S - 0145088

990S - 0145088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0147260.
99US-0147303.
99US-0147416.
99US-0147493.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-AUG-19
03-AUG-19
04-AUG-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-AUG-1
                                                                                                                                                                                                  Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence; corn.
                  74 ARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPA 133
                              1 ilglrssvgpavqargvhqsvatdgpsstqpalpkaravapkpssrgeyvvaklddlvnw 60
                                                        Zea mays protein fragment SEQ ID NO: 39954.
                                                                                                                         AAG33025 standard; Protein; 200 AA
                                                                                                                                                                                                                                                                                                                   9905-0121825.
9905-0123180.
9905-0125788.
9905-0125788.
9905-0126264.
9905-012628.
9905-0126237.
9905-0130871.
9905-0130875.
9905-0130875.
9905-013089.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0137502.
99US-0137724.
99US-0138094.
                                                                                                                                                                                                                                                                                                 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0132485
99US-0132486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0135629
                                                                                                                                                              17-OCT-2000 (first entry)
                                                                                                                                                                                                                                         Zea mays subsp. mays
                                                                                                                                                                                                                                                                                                 25-FEB-2000;
                                                                                                                                                                                                                                                            EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-APR-1999;
30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-JUN-1999;
08-JUN-1999;
                                                                                                                                                                                                                                                                               06-SEP-2000
                                                                                                                                            AAG33025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MAY-
g
                   Qγ
                                   Db
                                                        á
                                                                          g
```

```
Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                     91 VEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALRKVYDQMPEPRYVVSM 150
                                                                                              77
      Arabidopsis thaliana protein fragment SEQ ID NO: 14714.
                                                                                                                                                                                                                                                                                                                                                                                          AAG14738 standard; Protein; 216 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9905 - 0121825
9905 - 0123188
9905 - 0125788
9905 - 0125788
9905 - 0125785
9905 - 0127462
9905 - 0127462
9905 - 0127462
9905 - 0127462
9905 - 0130047
9905 - 0130047
9905 - 0131489
9905 - 0131489
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
9905 - 0132486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         990S-0135529
990S-0135629
990S-0136021.
990S-0136392.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29 MAR-1999)
01-APR-1999)
06-APR-1999,
06-APR-1999,
16-APR-1999,
23-APR-1999,
23-APR-1999,
23-APR-1999,
30-APR-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-1999;
04-MAY-1999;
05-MAY-1999;
06-MAY-1999;
06-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EP1033405-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07 - MAY - 1999;
11 - MAY - 1999;
14 - MAY - 1999;
14 - MAY - 1999;
14 - MAY - 1999;
16 - MAY - 1999;
19 - MAY - 1999;
20 - MAY - 1999;
                                                                                                                                                                                                                                           211 YRR 213
                                                                                                                                                                                                                                                                     : :
198 wtk 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-MAR-1999;
25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAG14738;
                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                        AAG14738
                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                         S
                                                                                                                                                        ŏ
                                                                                                                                                                                                g
                                                                                                                                                                                                                           ... ō
                                                                                                                                                                                                                                                                     . <u>ප</u>
                                                                                                                                                                                                                                                                                                                                                                                                                  ή;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9905 - 0147935 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0148171 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 0149175 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 015918 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 016091 - 9905 - 01609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 134; Conserv
09-AUG-1999,
11-AUG-1999,
12-AUG-1999,
13-AUG-1999,
13-AUG-1999,
17-AUG-1999,
17-AUG-1999,
20-AUG-1999,
20-AUG-1999,
23-AUG-1999,
24-AUG-1999,
27-AUG-1999,
27-AUG-1999,
27-AUG-1999,
27-AUG-1999,
27-AUG-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                               01-SEP-1999)
07-SEP-1999)
10-SEP-1999;
13-SEP-1999;
15-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15. SEP 1999
20. SEP 19999
22. SEP 19999
24. SEP 19999
24. SEP 19999
26. SEP 19999
26. OCT 19999
27. SEP 19999
28. SEP 19999
29. SEP 19999
29. SEP 19999
20. CCT 199999
20. CCT 19999
20. CCT 199999
20. CCT 19999
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-0CT-1999;
29-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
```

	•		
	•		
-0137222 -01372222 -0138094 -01388540 -01388540 -01398119 -013985119 -013945119	001939999999999999999999999999999999999	00	00000000000000000000000000000000000000
00000000000000	0 W W W W W W W W W W W W W W W W W W W		
1 JUN-1999 4 JUN-1999 7 JUN-1999 8 JUN-1999 0 JUN-1999 0 JUN-1999 6 JUN-1999 6 JUN-1999 8 JUN-1999	18 - CON 19999 (18 - CON 19999) (19 - CO	2. dul. 1999 6. dul. 1999 7.	2duc. 1999 2duc. 1999 3duc. 1999 3duc. 1999 3duc. 1999 5duc. 1999 7duc. 1999 7duc. 1999 7duc. 1999 7duc. 1999 7duc. 1999 7duc. 1999 7duc. 1999 8duc. 1999 1duc. 1999
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	

990US - 0147192 990US - 0147260 990US - 0147363 990US - 0147493 990US - 0147493 990US - 0148319 990US - 0148929 990US - 0148929 990US - 0148929 990US - 0148929 990US - 0148929 990US - 0149929 990US - 0149929 990US - 0149929 990US - 0149929 990US - 0149929 990US - 0149929 990US - 0151006 990US - 0151303 990US - 0151006 990US - 0159234 990US - 0159238 990US - 0159288 990US - 01600814 990US - 01600814	90S-016140 90S-016140 90S-016136 90S-016136 90S-016136 90S-016136 90S-016199 90S-016199
05 AUG 10999 06 AUG 10999 06 AUG 10999 09 AUG 10999 11 AUG 10999 12 AUG 10999 13 AUG 10999 14 AUG 10999 15 AUG 10999 16 AUG 10999 17 AUG 10999 18 AUG 10999 18 AUG 10999 18 AUG 10999 19 AUG 10999 10 SEP 10999 11 AUG 10999 11 AUG 10999 12 AUG 10999 12 AUG 10999 13 AUG 10999 14 AUG 10999 15 SEP 10999 16 SEP 10999 17 AUG 10999 18 AUG 10999 18 AUG 10999 19 AUG 10999 10 SEP 10999 11 SEP 10999 11 AUG 10999 11 AUG 10999 12 AUG 10999 13 AUG 10999 14 AUG 10999 15 AUG 10999 16 SEP 10999 17 AUG 10999 18 AUG 10999 19 AUG 10999 11 AUG 10999 12 AUG 10999 13 AUG 10999 14 AUG 10999 15 AUG 10999 16 AUG 10999 17 AUG 10999 18	60-001-109999999999999999999999999999999
######################################	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

```
9905 - 0135353

9905 - 0135353

9905 - 0135629

9905 - 0136629

9905 - 0136722

9905 - 0137522

9905 - 0137724

9905 - 0137724

9905 - 0137724

9905 - 0139455

9905 - 0139455

9905 - 0139455

9905 - 0139455

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139463

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139463

9905 - 0139465

9905 - 0139465

9905 - 0139465

9905 - 0139463

9905 - 0142396

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0144335

9905 - 0145085

9905 - 0145085

9905 - 0145085

9905 - 0145085

9905 - 0145085

9905 - 0145085

9905 - 0145085

9905 - 0145085
                                                                                                                                    14-JUN-1999;
16-JUN-1999;
16-JUN-1999;
                                                                                                                                                                                                                                                                     18-JUN-19
18-JUN-19
                        ä
                                                                                                                                                                                                                                                                                                                                                Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                    136 KVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEALLYGIL 195
                                                                                                                                               RSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALR 135
                        Gaps
                                                          24 AVQARGV---HQSVATDGPSS-----TQPALPKARAVAPKPSSRGEYVVAKLDDLVNWAR
                        ..
œ
 64.8%; Score 725; DB 21; Length 216; 68.2%; Pred. No. 5.4e-73; ive 20; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana protein fragment SEQ ID NO: 19564.
                                                                                                                                                                                                                                                        AAG18237 standard; Protein; 216 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  990S-0121825.
990S-0123180.
990S-0125784.
990S-0125784.
990S-0125785.
990S-0126264.
990S-0128714.
990S-0128714.
990S-0130891.
990S-0131449.
990S-0132485.
990S-0132486.
990S-0132486.
990S-0132486.
990S-0132486.
990S-0132486.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0134370.
99US-0134768.
99US-0134941.
99US-0135124.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000EP-0301439
                                                                                                                                                                                            |||:|| | :
199 qlqkkinrrkdflhwwnk 216
                                                                                                                                                                              196 OLORKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                    17-OCT-2000 (first entry)
Query Match
Best Local Similarity 68.2
Matches 135; Conservative
                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                  EP1033405-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25 - FEB - 1999;

05 - MAR - 1999;

23 - MAR - 1999;

25 - MAR - 1999;

26 - MAR - 1999;

01 - APR - 1999;

08 - APR - 1999;

19 - APR - 1999;

19 - APR - 1999;

23 - APR - 1999;

23 - APR - 1999;

30 - APR - 1999;

31 - APR - 1999;

32 - APR - 1999;

30 - APR - 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                        06-SEP-2000
                                                                                                                                                                                                                                                                                AAG18237;
                                                                                        9/
                                                                  g
                                                                                                                                                                                                                                                            ò
                                                                                                          g
                                                                                                                            Ω
                                                                                                                                                      g
                                                                                                                                                                           QΥ
                                                                                                                                                                                               Q
```

ä

us-09-525-867-1.rag

```
990S-0146388.
990S-0146389.
990S-01472038.
990S-0147302.
990S-0147303.
990S-0147303.
990S-0147416.
990S-0147416.
990S-0147433.
990S-0148319.
990S-0148319.
990S-0148319.
990S-0148319.
990S-0149368.
990S-0149368.
990S-0149368.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              990x-0151065.
990x-0151066.
990x-0151080.
990x-0151303.
990x-0151438.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            990'S - 015236'S - 990'S - 015236'S - 990'S - 015236'S - 990'S - 015478'S - 990'S - 015478'S - 990'S - 01556'S - 990'S - 01556'S - 990'S - 01556'S - 990'S - 01556'S - 990'S - 0156'S - 990'S - 0156'S - 990'S - 0156'S - 990'S - 0156'S - 990'S - 01592'S - 990'S - 01593'S - 990'S - 0150'S - 990'S - 990'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           990S-0161405.
990S-0161406.
990S-0161359.
990S-0161360.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0160814.
99US-0160815.
99US-0160980.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0160981.
99US-0160989.
99US-0161404.
                                                                                                                                                   05-AUG-1999;
06-AUG-1999;
06-AUG-1999;
09-AUG-1999;
10-AUG-1999;
11-AUG-1999;
13-AUG-1999;
13-AUG-1999;
13-AUG-1999;
                                                            03-AUG-1999;
04-AUG-1999;
04-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5-SEP-1999;
```

```
Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                 76 RSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALR 135
                                                                                                                                        Gaps
                                                                                                 24 AVQARGV---HQSVATDGPSS-----TQPALPKARAVAPKPSSRGEYVVAKLDDLVNWAR 75
                                                                    .;
œ
                                                Query Match 64.8%; Score 725; DB 21; Length 216; Best Local Similarity 68.2%; Pred. No. 5.4e-73; Matches 135; Conservative 20; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana protein fragment SEQ ID NO: 14713.
                                                                                                                                                                                                                                                                             AAG14737 standard; Protein; 218 AA.
99US-0161920.
99US-0161992.
99US-0161993.
99US-0162142.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          990S - 0121825
990S - 0123180
990S - 0125788
990S - 01257865
990S - 0126785
990S - 0127465
990S - 0128134
990S - 0128814
990S - 01308714
990S - 0130891
990S - 0130891
990S - 0131486
990S - 0132486
                                                                                                                                                                                                          196 QLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                      |||:|| | :
199 qlqkkinrrkdflhwwnk 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000EP-0301439
                                                                                                                                                                                                                                                                                                                  17-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                   EP1033405-A2.
28-OCT-1999;
28-OCT-1999;
28-OCT-1999;
29-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                       06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-1999
                                                                                                                                                                                                                                                                                                AAG14737;
                                                                                                                                                                                                                                                                   AAG14737
                                                                                                                                                                                                                                                           RESULT
 g
                                                                                                        g
                                                                                                                          δŽ
                                                                                                                                                                   ò
                                                                                                                                                                                   g
                                                                                                                                                                                                         ò
```

			•	•
·				
		ì		
		•		
		•		
108148818888	440768884888788661886			
2 t	COUST44444444444444447CCCCCCCCCCCCCCCCCCCCC		8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	2221493
77777		200000000000000000000000000000000000000	777777777777777777777777777777777777777	444666666666666666666666666666666666666
99999999999	000000000000000000000000000000000000000	000000000000000	000000000000000000	0000000000000
	x x x x x x x x x x x x x x x x x x x	80088008800880088008800880088008800880		00000000000000000000000000000000000000
000000000000000000000000000000000000000		, , , , , , , , , , , , , , , , , , ,	, a a a a a a a a a a a a a a a a a	, , , , , , , , , , , , , , , , , , ,
	Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ Თ	, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , ,
A PAYY PAYY PAYY PAYY PAYY PAYY PAYY PA				
ZZZZZZZZDDD		99999999999	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	99999999999
	00000000000000000000000000000000000000			
K. K		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	
	<del>8                                    </del>			,
			•	

9905 - 0144426 9905 - 01449420 9905 - 0149923 9905 - 0149923 9905 - 0149930 9905 - 0151065 9905 - 0151065 9905 - 0151080 9905 - 0151080 9905 - 0151080 9905 - 0151333 9905 - 0151438 9905 - 0151336 9905 - 0151336 9905 - 0151336 9905 - 0155659 9905 - 0156659 9905 - 015665 9905 - 015665 9905 - 015665 9905 - 015665 9905 - 015665 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0159638 9905 - 0160980 9905 - 0160980 us-09-525-867-1.rag

```
99US-0132487.

99US-0132863.

99US-0134256.

99US-0134218.

99US-0134219.
                                                                                                                9905 - 0.134370

9905 - 0.134370

9905 - 0.134376

9905 - 0.134376

9905 - 0.135523

9905 - 0.135523

9905 - 0.135522

9905 - 0.135522

9905 - 0.135522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.137522

9905 - 0.147525

9905 - 0.147525

9905 - 0.147525

9905 - 0.147525

9905 - 0.144733

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.144333

9905 - 0.145085
                                                                                                                                                                                                                                                                                                                          04-JUN-1999)
07-JUN-1999)
08-JUN-1999)
10-JUN-1999)
10-JUN-1999)
                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                                                                                                                                                                              76 RSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKMAPALR 135
                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                  24 AVQARGV---HQSVATDGPSS----TQPALPKARAVAPKPSSRGEYVVAKLDDLVNWAR 75
                                                                                                                                                                                                                                                                                        œ
                                                                                                                                                                                        Query Match 64.8%; Score 725; DB 21; Length 218; Best Local Similarity 68.2%; Pred. No. 5.5e-73; Matches 135; Conservative 20; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana protein fragment SEQ ID NO: 19563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAG18236 standard; Protein; 218 AA
99US-0161405.
99US-0161406.
99US-0161369.
99US-0161361.
99US-0161320.
99US-0161992.
99US-0161993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9905 - 0121825 - 9905 - 012180 - 9905 - 0123180 - 9905 - 0125788 - 9905 - 0126785 - 9905 - 0126785 - 9905 - 0126785 - 9905 - 0126785 - 9905 - 0130891 - 9905 - 0130891 - 9905 - 0132484 - 9905 - 0132484 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 0132486 - 9905 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 9005 - 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196 QLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |||:|| | :
201 qlqkkinrrkdflhwwnk 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana.
25-OCT-1999,
25-OCT-1999,
26-OCT-1999,
26-OCT-1999,
28-OCT-1999,
28-OCT-1999,
28-OCT-1999,
29-OCT-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-MAR-1999
25-MAR-1999
01-APR-1999
06-APR-1999
16-APR-1999
16-APR-1999
119-APR-1999
23-APR-1999
23-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
65-MAY-1999
66-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAG18236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
```

ć

Gaps

ώ ώ

Length 218; 35; Indels

```
Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence; corn.
                                                                                                                                                                                                                                                                                                                RSSLWPMIFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGILINKMAPALR 135
                                                                                                                                                                                                                       24 AVQARGV---HQSVATDGPSS----TQPALPKARAVAPKPSSRGEYVVAKLDDLVNWAR 75
                                                                                                                                                                                                                                    64.8%; Score 725; DB 21;
68.2%; Pred. No. 5.5e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays protein fragment SEQ ID NO: 39955.
                                                                                                                                                                                               20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                   AAG33026
ID AAG33026 standard; Protein; 158 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          990S-0121825.
990S-0123180.
990S-0125784.
990S-0125784.
990S-01267654.
990S-0127465.
990S-0128714.
990S-0128714.
990S-0129845.
990S-0129845.
  99US-0160815.
99US-0160980.
99US-0160981.
99US-0161404.
99US-0161405.
99US-0161360.
99US-0161360.
99US-0161361.
99US-0161361.
99US-0161363.
                                                                                                                                                                                                                                                                                                                                                                        QLORKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0130891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-OCT-2000 (first entry)
                                                                                                                                                                                    Best Local Similarity 68.29
Matches 135; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zea mays subsp. mays.
  21-0CT-1999;
22-0CT-1999;
22-0CT-1999;
25-0CT-1999;
25-0CT-1999;
26-0CT-1999;
26-0CT-1999;
26-0CT-1999;
28-0CT-1999;
28-0CT-1999;
28-0CT-1999;
28-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-MAR-1999
09-MAR-1999
23-MAR-1999
25-MAR-1999
01-APR-1999
06-APR-1999
06-APR-1999
16-APR-1999
16-APR-1999
119-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-SEP-2000
                                                                                                                                                                  Query Mac.
*+ Local ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAG33026;
                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                              196
                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ολ
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                              ŏ
9908.014519.2
9908.014519.2
9908.014519.4
9908.014518.4
9908.014518.1
9908.0145218.3
9908.0145218.3
9908.0145218.3
9908.0145218.3
9908.0145218.3
9908.0145218.3
9908.0145218.3
9908.0145218.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.0144730.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
9908.015130.3
                                                                                                    02-AUG-1999

02-AUG-1999

03-AUG-1999

04-AUG-1999

05-AUG-1999

05-AUG-1999

06-AUG-1999

06-AUG-1999

06-AUG-1999

10-AUG-1999

11-AUG-1999

11-AUG-1999
                                                                                                                                                                                                                                                                                                                                      20-AUG-1999;
20-AUG-1999;
20-AUG-1999;
```

																									÷																						
w	۲,	 		· .	· •	 		 ວິໝ	ਦ <del>ਹ</del>							4 C		ص <i>د</i>													4.5																
(*)	יו ניין	3 (4)	(*) (	*) (*)	(7) (	(T)	יו ניין ו	ירים כי	(4) (4)	, (*) (	7) (7)	സ	לים) ניי	നറ	າຕາ	സസ	(m)	ຕາຕ	9	ຕເ	າຕ	സ്	າຕ	) M	നേ	າຕາ	നര	າຕ	me	) <del></del>	<b>+</b> +	** *	* **	T T	<b>**</b> *	* -*	** *	* **	<b>**</b> *	* -*					+ -+ -	44884	*
-01	55	55	-01	70-	-01	- 5	10-	- 5	-01	10:	-07	0.5	55	25	12	55	-01	010	-01	507	-01	5	0.0	10	0.0	15	50	55	50	-01	-01	01	10	-01	0.0	12	-01	10	10-	55	100	12:	55	125	155	-01	2
U1	ບາບ	ı Oı	0, 0	יט יכ	01 0	יט יכ	0,0	100	OI OI	010	ภเอเ	ON C	יט ת	on o	· On ·	ດາດ	on o	on o	on.	ന ഗ	າດາ	താ	תסת	one	ത മ	י ססיי	ത മ	$\sigma$	തെ	י ססי	തത	തര	n on .	നസ	$\sigma$	U CD	നദ	<b>a</b>	നവ	$\sigma$	നേദ	\ m \	$\sigma$	നദ	$\mathbf{n} \cdot \mathbf{m} \cdot \mathbf{c}$	9908 9908	2/
::	:			: ::					<u></u>	· <u>:</u> .	:: ::		:						· <u>·</u> ·					· <u>·</u> ·	· ·					۰							٠		٠								
0.	D 0	9	500	ת ת	60	200	60	9.0	გგ	6	200	600	ע ע	50	6	თ თ	6	50	5	თ თ	50	000	ע ע	000	5 0	00	တ္တ	9	დ დ	5	<u> </u>	60	0.0	<u>م</u> م	900	00	9	00	<u>დ</u> ფ	0	σ σ	9	<u>ი</u> დ	000	000	1999	n
APR-	APR-	MAY-	MAY-	MAY-	MAY-	MAY- MAY-	MAY-	MAY-	MAY- MAY-	MAY-	MAY- MAY-	MAY-	JUN-	-NOD	JUN-	-NO5	-NOC	-NOD	JUN-		-NDS	-205	-NOD	-NDS	NOD	NOS	-NOD	JUN-	-NO5	-NDS	JUN-	JUN	-NOD	70L- 70L-	JUL-	301-	-105	101		JUL		-10	JUL- JUL-	JUL-		- JUL -	2
																																														20-12	
PR	ران الاران	. A.	74 t	7 0 7 5	PR t	도 다 도 다	0. 0 5. 0	, Q.	2	24.0	7. C.	<b>8</b> 0	7. U.	2 d	24	4 C	A C	۲ A	P.R.	<u>د</u> د	<u>بر</u>	0. 0 0. 0	4 64	K 1	ρ. ρ. ρ. α	: 24	<u>د</u> د	. K	2. 2. 2. 2.	P. R.	ዊ <b>ሮ</b>	5. C	4 64	<u>د</u> د	۲. c	4 64	α, α	4 P4 1	α, α α. α	4 24	EK EK	£ 1	<u>κ</u> κ	<u>د</u> و	. K. C	r 0r 0	٠.
				_																		p., p.	., 114	, ,, ,						_	_ ~		- 14	щ ш	F-4 F-	4 1-4	,, 1.1	4	р	-,	<b></b> 1-1	, ,11, 1	щ ш	щ ц	4 HL L	4 14 13	4

99005 - 0145086 - 99005 - 0145088 - 99005 - 0145088 - 99005 - 0145087 - 99005 - 0145087 - 99005 - 0145087 - 99005 - 0145182 - 99005 - 0145182 - 99005 - 0145182 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 0145218 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 99005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 - 015005 -

21 - UUL - 1999 22 - UUL - 1999 23 - UUL - 1999 23 - UUL - 1999 23 - UUL - 1999 24 - UUL - 1999 25 - UUL - 1999 26 - UUL - 1999 27 - UUL - 1999 28 - UUL - 1999 28 - UUL - 1999 29 - UUL - 1999 20 - AUG - 1999 31 - AUG - 1999 32 - AUG - 1999 33 - AUG - 1999 34 - AUG - 1999 35 - AUG - 1999 36 - AUG - 1999 37 - AUG - 1999 38 - AUG - 1999 39 - AUG - 1999 31 - AUG - 1999 31 - AUG - 1999 31 - AUG - 1999 32 - AUG - 1999 33 - AUG - 1999 34 - AUG - 1999 35 - AUG - 1999 36 - AUG - 1999 37 - AUG - 1999 38 - SEP - 1999 39 - CCT - 1999 31 - C

```
990S - 0132048
990S - 0132407
990S - 0132486
990S - 0132486
990S - 0132486
990S - 0132486
990S - 0132487
990S - 0134219
990S - 0134219
990S - 0134219
990S - 0134221
990S - 0136282
990S - 0136282
990S - 0136282
990S - 0136282
990S - 0139452
990S - 0139453
990S - 0139453
990S - 0139453
990S - 0139460
990S - 0139460
                                                                                                                                                                                                                                                                                                                                                                                                                                         990S-0139817.
990S-0139899.
990S-0140353.
990S-0140354.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9903-0140823.
9903-0140991.
9903-0141287.
9903-0141842.
9903-0142154.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  990S-0142893
990S-0142803
990S-0142920
990S-0142977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990S-0143624
990S-0144005.
990S-0144085.
990S-0144325.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0144331
99US-0144332
                                                                                                                                                                                                                                                                                                                     18-70N-1999;
22-70N-1999;
23-70N-1999;
                                                                                                                                                                                                                                                  08-JUN-1999)
10-JUN-1999)
10-JUN-1999)
14-JUN-1999)
16-JUN-1999)
17-JUN-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23.70N-1999;
24.70N-1999;
24.70N-1999;
29.70N-1999;
30.70N-1999;
01.70L-1999;
02.70L-1999;
06.70L-1999;
06.70L-1999;
06.70L-1999;
07.70L-1999;
07.70L-1999;
07.70L-1999;
07.70L-1999;
07.70L-1999;
                                                                                                                                                                                                            01-JUN-1999;
03-JUN-1999;
04-JUN-1999;
07-JUN-1999;
                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter termination sequence; corn.
                                                                                                                                                                                                                                         57 SSRGEYVVAKLDDLVNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQ 116
                                                                                                                                                                                                                                                                              117 SDVMIVAGTLINKMAPALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPV 176
                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                   .
0
                                                                                                                                                                                                   Length 158;
                                                                                                                                                                                                                       17; Indels
                                                                                                                                                                                                  63.1%; Score 705; DB 21; 79.6%; Pred. No. 6.1e-71; ive 15; Mismatches 17;
                                                                                                                                                                                                                                                                                                                  Zea mays protein fragment SEQ ID NO: 39956.
                                                                                                                                                                                                                                                                                                                                                                                         AAG33027 standard; Protein; 143 AA.
9905-0160741.
9905-0160767.
9905-0160770.
9905-0160814.
9905-0160981.
9905-0160981.
9905-0160981.
9905-0161405.
9905-0161405.
9905-0161350.
9905-0161350.
9905-0161350.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9905-0121825.
9905-0123180.
9905-0123180.
9905-0125788.
9905-0126785.
9905-0126785.
9905-0128714.
9905-0130871.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                              17-OCT-2000 (first entry)
                                                                                                                                                                                                  Query Match 63.1
Best Local Similarity 79.6
Matches 125; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays subsp. mays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
01-MAR-1999;
06-APR-1999;
21-0CT-1999;
21-0CT-1999;
21-0CT-1999;
21-0CT-1999;
21-0CT-1999;
22-0CT-1999;
                                                                             22-0CT-1999;
25-0CT-1999;
25-0CT-1999;
                                                                                                          25-0CT-1999;
26-0CT-1999;
26-0CT-1999;
26-0CT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EP1033405-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                            AAG33027;
                                                                                                                                                                                                                                                                                                                                                                               AAG33027
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                     δý
```

```
PR 21.7UL 1999 9908 0144814

PR 22.7UL 1999 9908 01440818

PR 22.7UL 1999 9908 0145088

PR 22.7UL 1999 9908 0145088

PR 22.7UL 1999 9908 0145189

PR 22.7UL 1999 9908 0144189

PR 23.7UL 1999 9908 0144189

PR 24.7UL 1999 9908 0144189

PR 25.7UL 1999 9908 0144189

PR 25.7UL 1999 9908 0145189

PR 25.7UL 1999 9908 0155086

PR 25.7UL 1999 9908 0155086

PR 27.7UL 1999
```

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71 VNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKM 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 59.3%; Score 663; DB 21; Length 143; Best Local Similarity 81.8%; Pred. No. 2.7e-66; Matches 117; Conservative 12; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana protein fragment SEQ ID NO: 14715.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAG14739 standard; Protein; 143 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 191 LYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           990S-0159584.
990S-0160741.
990S-0160767.
990S-0160814.
990S-0160814.
990S-0160819.
990S-016091.
990S-0161405.
990S-0161405.
990S-0161359.
990S-0161359.
990S-0161359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US - 0121825
99US - 0123548
99US - 0125788
99US - 0125788
99US - 0126785
99US - 0127462
99US - 0127462
99US - 0127463
99US - 0128714
99US - 0129845
99US - 0129845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana.
18-0CT-1999)
21-0CT-1999)
21-0CT-1999)
21-0CT-1999)
21-0CT-1999)
22-0CT-1999)
22-0CT-1999)
25-0CT-1999)
25-0CT-1999)
25-0CT-1999)
25-0CT-1999)
                                                                                                                                                                                                                                                                                                                26-OCT-1999;
26-OCT-1999;
28-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                28-OCT-1999;
28-OCT-1999;
29-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EP1033405-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25 - FEB - 1999,
05 - MAR - 1999,
09 - MAR - 1999,
23 - MAR - 1999,
25 - MAR - 1999,
01 - APR - 1999,
06 - APR - 1999,
16 - APR - 1999,
16 - APR - 1999,
21 - APR - 1999,
21 - APR - 1999,
21 - APR - 1999,
23 - APR - 1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAG14739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAG14739

ID AAG14739

XXX AAG17-00

XXX AAG17-00

XXX Protr

XXX Protr

XXX Arab

XXX Arab

YXX Arab

YXX
  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

***************************************			
- STORE OF S		900S-0139455. 900S-0139456. 900S-0139456. 900S-0139461. 900S-0139461. 900S-0139461. 900S-0139461. 900S-0139463. 900S-0139463. 900S-0139463. 900S-0139763. 900S-0140989. 900S-0140991. 900S-0141287. 900S-0141287.	0-sn6
28 APR 30 APR 30 APR 04 MAY 05 MAY 06 MAY 01 MAY 114 MAY 114 MAY 118 MAY 21 MAY 21 MAY	24 - WAYY - 27 - WAYY - 27 - WAYY - 27 - WAYY - 28 - WAYY - 28 - WAYY - 28 - WAYY - 28 - 20 - 20 - 20 - 20 - 20 - 20 - 20	189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189-700 189	009-001-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-101-13-10
X X X X X X X X X X X X X X X X X X X	7	7	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

PR 20-JUL-1999; 99US-0144884

PR 21-JUL-1999; 99US-0146088

PR 22-JUL-1999; 99US-0146088

PR 22-JUL-1999; 99US-0146089

PR 22-JUL-1999; 99US-0146089

PR 22-JUL-1999; 99US-0146089

PR 23-JUL-1999; 99US-0145181

PR 24-JUL-1999; 99US-0144926

PR 25-JUL-1999; 99US-0144926

PR 25-JUL-1999; 99US-0144936

PR 25-JUL-1999; 99US-0144936

PR 25-JUL-1999; 99US-014993

PR 25-JUL-1999; 99US-014993

PR 25-JUL-1999; 99US-014993

PR 25-JUL-1999; 99US-014993

PR 27-JUL-1999; 99US-0151999

PR 27-JUL-1999;

```
990S-0130891

990S-0131449

990S-01314484

990S-0132485

990S-0132485

990S-0132487

990S-0132487

990S-0134218

990S-01349453

990S-0139453

990S-0139453

990S-0139453

990S-0139463

990S-0140353

990S-0140353

990S-0144233

990S-0144333

990S-0144333

990S-0144333

990S-0144333

990S-0144333

990S-0144333

990S-0144333

990S-0144333

990S-0144333
                                                                                                                                                                                     -MAY-1999;
-MAY-1999;
-MAY-1999;
                                                                                                                                                                                                                                    ·,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                  131 APALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEAL 190
                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                            Query Match 59.1%; Score 661; DB 21; Length 143; Best Local Similarity 81.1%; Pred. No. 4.5e-66; Matches 116; Conservative 13; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana protein fragment SEQ ID NO: 19565.
                                                                                                                                                                                                                                                                                                                                                                                              AAG18238 standard; Protein; 143 AA
                                                                                                                                                                                                                                                                                                                                         |||:|||||:|| | :
|Iygllqlqkkinrrkdflhwwnk 143
                                                                                                                                                                                                                                                                                                                               LYGILQLQRKIKRERRLQIWYRR 213
990S-0159638.
990S-0159584.
990S-0160741.
990S-0160767.
990S-0160770.
990S-0160815.
990S-0160981.
990S-0160981.
990S-0160980.
990S-0160980.
990S-0160980.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0121825.
99US-0123180.
99US-012348.
99US-0125788.
99US-0126264.
99US-0126785.
99US-0128746.
99US-0128747.
99US-0139475.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                    17-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana
        18-007-1999
21-007-1999
21-007-1999
21-007-1999
21-007-1999
22-007-1999
22-007-1999
25-007-1999
25-007-1999
25-007-1999
26-007-1999
26-007-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAR-1999
25-MAR-1999
29-MAR-1999
20-APR-1999
06-APR-1999
08-APR-1999
19-APR-1999
11-APR-1999
21-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                  AAG18238;
                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
AAG18238
                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                              191
```

ò

qq

ò g õ g

```
Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    131 APALRKVYDQMPEPRYVVSMGSCANGGGYYHYSYSVVRGCDRIVPVDIYIPGCPPTAEAL 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71 VNWARRSSLWPMTFGLACCAVEMMHMAAPRYDMDRFGVVFRASPRQSDVMIVAGTLTNKM 130
                                                                                                                                                                                                                                                                                                                                                                 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            59.1%; Score 661; DB 21; Length 143; 81.1%; Pred. No. 4.5e-66; 1ve 13; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana protein fragment SEQ ID NO: 33132.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAG28057 standard; Protein; 143 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |||:||||:|| |: |: :
|21 lygllqlqkkinrrkdflhwwnk 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            191 LYGILQLQRKIKRERRLQIWYRR 213
                                                                                                                              990S-0160980.
990S-0160981.
990S-0160989.
990S-0161404.
                                                                                                                                                                                                                                             990S-0161361
990S-0161920.
990S-0161992.
990S-0161993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990S-0121825.
990S-0123180.
990S-0125784.
990S-0125788.
990S-0126785.
990S-0127462.
990S-0127462.
990S-0128234.
990S-0128234.
                                            99US-0160741.
99US-0160767.
99US-0160768.
                                                                                     99US-0160770.
99US-0160814.
99US-0160815.
                                                                                                                                                                                                      99US-0161406.
99US-0161359.
99US-0161360.
   99US-0159637
                99US-0159638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 81.19
Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana
25-FEB-1999,
05-MAR-1999,
05-MAR-1999,
23-MAR-1999,
25-MAR-1999,
01-APR-1999,
06-APR-1999,
06-APR-1999,
16-APR-1999,
16-APR-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAG28057;
                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAG28057-
IID AAG28057-
AAC2 AAG2
XXX AAG28057-
XXX XXX I7-0
XXX XXX EPID A ACAD
XXX A ACAD
XX A A
    g
                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                         990S - 0144814
990S - 0145086
990S - 0145085
990S - 0145087
990S - 0145087
990S - 0145192
990S - 0145192
990S - 0145193
                                                                                                                                                                                                                                                                                                                                               99US-0147260.
99US-0147303.
99US-0147416.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 990S-0151303
990S-0151303
990S-0151930
990S-0152363
990S-0152363
990S-0154018
990S-0154018
990S-0154739
                                                                                                                                                                                     99US-0145913.
99US-0145918.
99US-0145919.
                                                                                                                                                                                                                                                           99US-0146388.
99US-0146389.
99US-0147038.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0148341.
99US-0148565.
99US-0148684.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0149723.
99US-0149929.
99US-0149902.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0149930.
99US-0150566.
99US-0150884.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0157865.
99US-0158029.
99US-0158232.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0159295.
99US-0159329.
99US-0159330.
99US-0159331.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0155486
99US-0155659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0156596
99US-0157117
                                                                                                                                                                                                                                                99US-0146386
                                                                                                                                                                                                                                                                                                                                                                                          99US-0147493
                                                                                                                                                                                                                                                                                                                                                                                                         99US-0147935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0149175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0149722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0158369
                                                                                                                                                                                                                                 99US-0145951
                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0148171
                         21 - 70L - 1999
22 - 70L - 1999
23 - 70L - 1999
23 - 70L - 1999
23 - 70L - 1999
24 - 70L - 1999
25 - 70L - 1999
27 - 70L - 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -AUG-1
```

; 0

	90S-013044	90S-013051	9US-013089	9US-0131449	9025-0132048	9US-0132407	9US-0132484	90S-0132485	9TS-0132486	9HS-0132487	911S-0132863	OTC-0134256	0104010 000	902-0124718	90S-0134219	9US-0134221	9US-0134370	9US-0134768	9US-0134941	9US-0135124	9115-0135353	000000 000 000000000000000000000000000	9TE-0136021	012620	00000000000000000000000000000000000000	2070510 2070	012/2/2/20 0116-0137530	070/570 010	700/010-010	902-013/74 ************************************	9000-0100008	9US-0138540	9US-0138847	9US-0139119	9US-0139452	9US-0139453	9US-0139492	9US-0139454	9US-0139455	9US-0139456	902 0133430	903-013943/ orre-0139459	0100100100	010-010-010 010-010-010	0465101908	902-0129401	90S-0139462	90S-0139463	00/6570-506	50.55-0139763	186510-S06	6686710-S06	90S-0140353	9US-0140354	9US-0140695	9US-0140823	9US-0140991	9US-014128/	9US-UI4I842	9US-0142154	9US-0142055	908-0142390	9US-0142803	9US-0142920	9US-0142977	9US-0143542	3US-0143624	OUS-0144005	JUS-0144085	9US-0144086	9US-0144325	9US-0144331	9US-0144332	JUS-0144333	99US-0144334.	4US-0144335	
	1-APR-1999	3-APR-1999	3-APR-1999	8-APR-1999	0-APR-1999	0-APR-1999	4-MAY-1999	5-MAY-1999	6-MAY-1999	6-MAY-1999	7-MAY-1999	1-MAY-1099	- WAY-1	7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	6661 - IWW - 1	4 - MAY - 1999	4 -MAY - 1999	8-MAY-1999	9-MAY-1999	0-MAY-1999	1-MAY-1999	4-MAY-1999	5-MAY-1999	7-WAY-1000	POOL - VAN- 9	1 - TIN- 1 999	3 - TTM- 1 000	0001 - MIT - A	4 - CON - 1999	7 - NOO! 7	SECTION OF S	666T-NOC-0	566T-NOC-0	6661-NDD-1	6-JUN-1999	6-JUN-1999	7-JUN-1999	8-JUN-1999	8-JUN-1999	8-JUN-1999	0001 NUL 9	COCT NOT O	0001-MIL - 8	COOL TITLE	000011X1110010	0-00N-1999	0 - CONT - TANK	0 - UNI - 1999	0 - 0 - 1 - 1 - 0 - 0	DOOL MILE	0001-100-1	2-00N-1999	666T-NOC-8	9661-NDC-F	9991-NOC-4	SECT-NOT-B	9991-NOC-8	DOCK TIME	1 - JOL - 1999	1-100-1999	666T-TOC-2	6-JUL-1999	9-JUL-1999	3-JUL-1999	2-JUL-1999	3-JUL-1999	4-JUL-1999	2-JUL-1999	0-JUL-1999	0-00F-100-0	PULL-1999	9-JUL-1999	9-JUL-1999	9-00F-1999	19-JUL-1999;	A A A A A A A A A A A A A A A A A A A	\$
	PR	PR	PR	PR	PR	PR	PR	PR	PR	P	G G	20	. 0	4 0	7 t	ר קין	P. P.	PR	ኮጽ	፵	PR	Ω. Ω	C. C.	0,0	; a	: n	, <u>0</u>		4 6	4 6	4 6	יי נ די נ	ፓ ! ፕ ፡	H.	PR	PR	PR	PR	PR	D.	2 2	4 0	200	4 0	4 6	4 6	7 0	40	r c	r :	д с Ж с	7 g	7 I	۲. ر ۲. ر	Z 5	7, C	7. t	7. C	Z 6	¥ ;	ች !	7. i	д Ж.	PR	ማማ	G.	7d 24	다.   	7. C	Z 5	7 t	7 E	7 C	7 5	ፓ ሀ ፕ ፔ	7 2	•

PR 20-JUL-1999; 99US-0144352
PR 20-JUL-1999; 99US-0144814.
PR 21-JUL-1999; 99US-0144814.
PR 22-JUL-1999; 99US-0145088.
PR 22-JUL-1999; 99US-0145088.
PR 22-JUL-1999; 99US-0145088.
PR 22-JUL-1999; 99US-0145088.
PR 22-JUL-1999; 99US-0145089.
PR 22-JUL-1999; 99US-0145088.
PR 22-JUL-1999; 99US-0144038.
PR 22-JUL-1999; 99US-0151065.
PR 22-SEP-1999; 99US-0151065.
PR 22-SEP-1999; 99US-0151065.
PR 22-SEP-1999; 99US-0151065.
PR 22-SEP-1999; 99US-0155109.
PR 22-SEP-1999; 99US-0155109.
PR 22-SEP-1999; 99US-0155109.
PR 22-SEP-1999; 99US-0155109.
PR 23-SEP-1999; 99US-0155109.
PR 23-S